Virginia Medical Monthly

Official Organ of the Medical Society of Virginia

Vol. 58, No. 3. WHOLE No. 948. RICHMOND, VA., JUNE, 1931 20 CENTS A COPY $2.00 A YEAR

THE SIGNIFICANCE OF BLOOD PRESSURE CHANGES IN HYPERTENSION*†

By J. EDWIN WOOD, JR., M. D., University, Va.

Blood pressure varies in the normal and in the hypertensive individual. The many factors influencing the height of blood pressure under physiological circumstances have been fully discussed.[1] The tendency to spontaneous changes of blood pressure in essential vascular hypertension has been studied[2-3-4] and noted as an early and almost characteristic feature of that affection.[5]

It is the purpose of this paper to record the blood pressure fluctuations taking place in a group of hypertensive patients with and without renal impairment and to discuss briefly the factors apparently governing the changes. No attempt has been made to select cases other than to obtain twenty-five examples with and twenty-five without kidney damage. Accordingly, a somewhat miscellaneous group has been recruited from the ward and out-patient service of the University of Virginia Hospital. The majority of these patients are still under observation, and return at varied intervals for manometer readings From the tables it is at once evident that the changes in blood pressure are not altogether idiopathic, and emphasis is laid upon the fact that known and apparently causal factors not infrequently accompany the variations in blood pressure.

The tabulation of the highest and the lowest of the several blood pressures recorded on each patient's hospital and out-patient record does not represent a carefully controlled or scientific method of study. It does, however, show the desirability of a critical attitude and the necessity for interpretations of blood pressure variations in terms of pathological physiology. As in our own experience, many physicians consciously fail to appreciate the wide fluctuations of arterial pressure during the course of a day. Mueller[6] has already noted the hourly and diurnal variations in blood pressure both in the hypertensive and normal individual. Weekly and seasonal changes have also been recorded at the Mayo Clinic. So, as Alvarez aptly states, before finally concluding upon the true height of a given patient's blood pressure, one must know the time of day, the day of the week, and the season of the year. The latest temperature recorded on the patient's sick child and the condition of the stock market might well be added in some instances. No attempt is made in the subsequent discussion of these fifty patients to account for all of the factors governing the variations in arterial pressure, but rather to picture roughly some of the main events which contribute to a falling blood pressure in hypertensive cases and to further emphasize the futility of a single observation.

Initially it was suspected that a more constant high pressure would be encountered in hypertensive patients showing renal damage, and for this reason the study was grouped as in Tables I and II. This preliminary hazard proved to be incorrect, as shown below.

In the fifty patients observed, the initial systolic pressure varied from 179 mm. Hg. to 280 mm. Hg., and only four had an initial pressure of less than 200 mm. Hg. An initial diastolic pressure of less than 110 mm. Hg. was recorded in but two instances. The writer is well aware of the errors often encountered relative to the method used for estimating diastolic pressure. However, it is known that the discrepancy in diastolic readings seldom exceeds an average of six mm. Hg.,[1] regardless of whether the reading be taken at the end of the third sound phase or the fourth sound phase heard below the blood pressure cuff. Tables I and II, in addition to other details, record the highest and lowest systolic and diastolic pressures for each patient during the period of observation.

Each of the twenty-five patients from the group with impaired renal function evidenced from 39 to 115 mm. Hg. fall in pressure at

*Read before the sixty-first annual meeting of the Medical Society of Virginia, at Norfolk, October 21-23, 1930.

†From the Department of Internal Medicine and the Cardiac Clinic of the University of Virginia Medical School, University, Va.

TABLE I
CASES WITH HYPERTENSION AND IMPAIRED RENAL FUNCTION

No.	Case	Age	R	S	High Syst.*	Low Syst.	High Diast.	Low Diast.	Syst. Var.	Diast. Var.	Observations	Apparent Explanation of Fall in Blood Pressure
1	AT	57	W	F	250	170	176	90	80	46	9 in 3 yrs.	Rest
2	JS	50	W	F	235	165	135	92	70	43	17 in 3 yrs.	Rest
3	LM	57	W	M	215	160	140	74	55	66	9 in 10 yrs.	Congestive Heart Failure
4	HF	27	W	M	212	140	140	80	72	60	14 in 2 yrs.	Unexplained. C. N. S. Lues
5	WM	70	W	M	186	114	150	70	72	80	12 in 2 yrs.	Cong. Fail.—Cor. Thromb's
6	BH	45	W	M	224	185	130	100	39	30	9 in 2½ yrs.	Congestive Heart Failure
7	FS	40	W	F	250	148	140	80	106	60	45 in 1 yr.	Uremia
8	TK	67	C	M	250	148	152	104	102	48	15 in 4 yrs.	Congestive Heart Failure
9	BC	52	W	M	200	133	140	88	67	52	34 in 4 yrs.	Congestive Heart Failure
10	HM	59	W	F	224	130	124	75	94	49	20 in 10 yrs.	Unexplained
11	AG	28	C	F	230	140	170	92	90	78	50 in 8 yrs.	Congestive Heart Failure
12	JP	53	C	F	240	165	160	75	75	85	25 in 3 yrs.	Unexplained
13	VH	60	C	F	260	160	140	112	100	28	9 in 3 yrs.	Unexplained
14	AF	52	W	M	240	125	140	80	115	60	8 in 3 yrs.	Severe Cerebral Arterioscler
15	GW	49	W	F	260	170	140	112	90	28	7 in 5 mos.	Uremia
16	WC	18	C	M	220	110	120	40	110	80	20 in 3 wks.	Uremia
17	CH	57	C	F	245	194	154	116	51	38	30 in 1½ yrs.	Rest—Uremia—Cong. Fail.
18	LB	41	W	F	280	200	185	135	80	50	13 in 4 mos.	Rest
19	GP	46	W	M	250	185	140	110	65	30	14 in 4 yrs.	Uremia—Congestive Failure
20	MP	56	C	M	210	120	130	70	90	60	21 in 6 yrs.	Unexplained—C. N. S. Lues
21	CT	42	W	M	202	160	140	104	42	36	10 in 2 mos.	Severe Nasal Hemorrhage
22	AJ	35	C	F	260	194	155	110	66	45	16 in 3 yrs.	Uremia—Congestive Failure
23	MC	62	C	M	246	140	156	90	106	66	12 in 5 yrs.	Congestive Heart Failure
24	SP	51	C	F	230	182	150	120	48	30	9 in 5 yrs.	Congestive Heart Failure
25	LW	50	W	F	230	150	150	118	80	32	50 in 4½ mos.	Congestive Heart Failure

R—Race. S—Sex. *All Blood Pressure Readings Expressed in mm. Hg. Var.—Variation.

Extremes of systolic and diastolic blood pressure readings observed in twenty-five unselected cases of hypertension with impaired renal function.

TABLE II
CASES WITH HYPERTENSION AND NORMAL RENAL FUNCTION

No.	Case	Age	R	S	High Syst.*	Low Syst.	High Diast.	Low Diast.	Syst. Var.	Diast. Var.	Observations	Apparent Explanation of Fall in Blood Pressure
1	JM	55	W	F	170	138	110	85	32	25	9 in 5 yrs.	Hyperthyroidism
2	TH	46	W	M	202	90	140	64	112	76	11 in 5 mos.	Coronary Thrombosis
3	KS	58	W	F	200	144	90	70	56	20	12 in 2 yrs.	Hyperthyroidism
4	NS	60	C	F	210	150	115	80	60	35	26 in 3 yrs.	Unexplained
5	BD	45	C	F	230	144	160	104	86	56	25 in 2 yrs.	Unexplained
6	HK	55	W	F	210	160	120	100	50	20	10 in 4 yrs.	Unexplained—C. N. S. Lues
7	LB	45	C	M	220	160	140	100	60	40	20 in 4 yrs.	Unexplained
8	TM	57	W	M	190	85	115	85	105	30	8 in 2 mos.	Coronary Thrombosis
9	JB	37	C	M	205	135	140	98	70	42	12 in 4 yrs.	Rest—Congestive Failure
10	RL	50	W	F	230	180	120	90	50	30	10 in 1 yr.	Rest—Congestive Failure
11	MC	50	C	F	265	160	150	100	105	50	46 in 4 yrs.	Unexplained
12	HS	49	W	F	220	144	160	85	76	75	17 in 1 yr.	Unexplained—?Drugs
13	MC	45	C	F	204	152	130	110	52	20	6 in 10 mos.	Congestive Failure
14	RS	65	W	F	280	172	120	78	108	42	10 in 8 mos.	Rest—?Drugs
15	RP	49	W	F	234	160	160	78	74	82	20 in 6 yrs.	Unexplained
16	PM	52	W	M	210	172	160	140	38	20	22 in 1 mo.	Congestive Failure—?Drugs
17	EM	37	C	F	265	198	170	130	67	40	51 in 7 mos.	Unexplained
18	JA	58	W	M	180	150	126	84	30	42	9 in 1 yr.	Congestive Failure
19	MT	61	W	F	230	168	130	100	62	30	9 in 6 mos.	Congestive Failure
20	PP	50	C	F	206	146	94	73	60	21	12 in 4½ yrs.	Unexplained
21	JS	59	W	M	240	182	140	108	58	32	7 in 10 mos.	Congestive Failure
22	JB	44	W	F	220	178	150	100	42	50	20 in 1 mo.	Menopause
23	DW	36	C	M	240	158	166	100	82	66	30 in 7 mos.	Rest—C. N. S. Lues
24	GS	60	W	F	260	180	138	92	80	46	32 in 3 yrs.	Unexplained
25	BC	52	W	F	230	170	120	88	60	32	20 in 5 mos.	Menopause

R—Race. S—Sex. *All Blood Pressure Readings Expres ed in mm. Hg. Var.—Variation.

Extremes of systolic and diastolic blood pressure readings observed in twenty-five unselected cases of hypertension with normal renal function.

some time during observation, with an average fall of 96 mm. Hg. and a 41 per cent decline from the average high systolic pressure of 234 mm. Hg. The diastolic pressure showed a marked downward variation along with the systolic, varying in its fall from 28 to 80 mm. Hg., with an average drop of 36 per cent from the average high diastolic of 146 mm. Hg. The downward fluctuations in this first group were apparently due to or accompanied by congestive heart failure in eight instances, uremia in six, rest in three, coronary thrombosis in one, severe nasal hemorrhage in one, and very severe cerebral arteriosclerosis in one. There was no logical explanation available for the remaining five.

The systolic pressure also fell in the hypertensives with good kidney function (Table II), the drop varying from 32 to 112 mm. Hg., according to the case, with an average fall of 80 mm. Hg. and a 36 per cent drop from the average high systolic of 222 mm. Hg. Somewhat similarly, the diastolic pressures fell 20 to 82 points with a 30 per cent fall from the average high diastolic of 134 mm. Hg. For this "non-nephritic" group no explanation of the variation was available in ten instances, hyperthyroidism was present in two, the menopause in two, coronary thrombosis in two, congestive failure in seven, and rest in two. Drugs may have influenced the fluctuations recorded in three patients of this group, but otherwise the series is free from drug interference.

The marked variations recorded in the "nephritic" group (Table I) were not expected. These fluctuations were due largely to the high incidence of terminal effects such as uremia and heart failure, and the relatively few instances of early nephritis. Early in its course diffuse nephritis frequently presents a blood pressure curve over a fair period of time, with little fluctuation.

In the hypertensive group without "nephritis," terminal events play a less striking part than in the nephritic group. Conversely, here, the earlier the case, frequently the greater the fluctuation. Furthermore, there were ten unexplained instances of variation in blood pressure in this group as compared to five in the "nephritic" group.

Mention should be made of the seeming association between blood pressure fluctuation in vascular hypertension and central nervous system syphilis (Fig. 1). We have been somewhat impressed with the frequency of this combination, but agree with Fishberg[1] that syphilis is unrelated etiologically to vascular hypertension. A marked fall in blood pressure

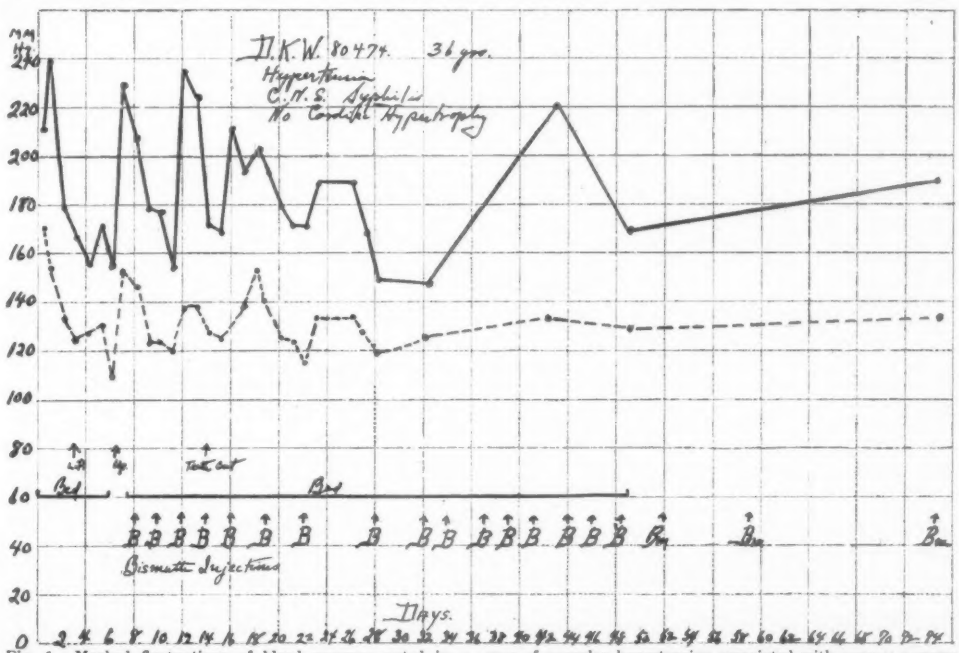


Fig. 1.—Marked fluctuations of blood pressure noted in a case of vascular hypertension associated with central nervous system syphilis.

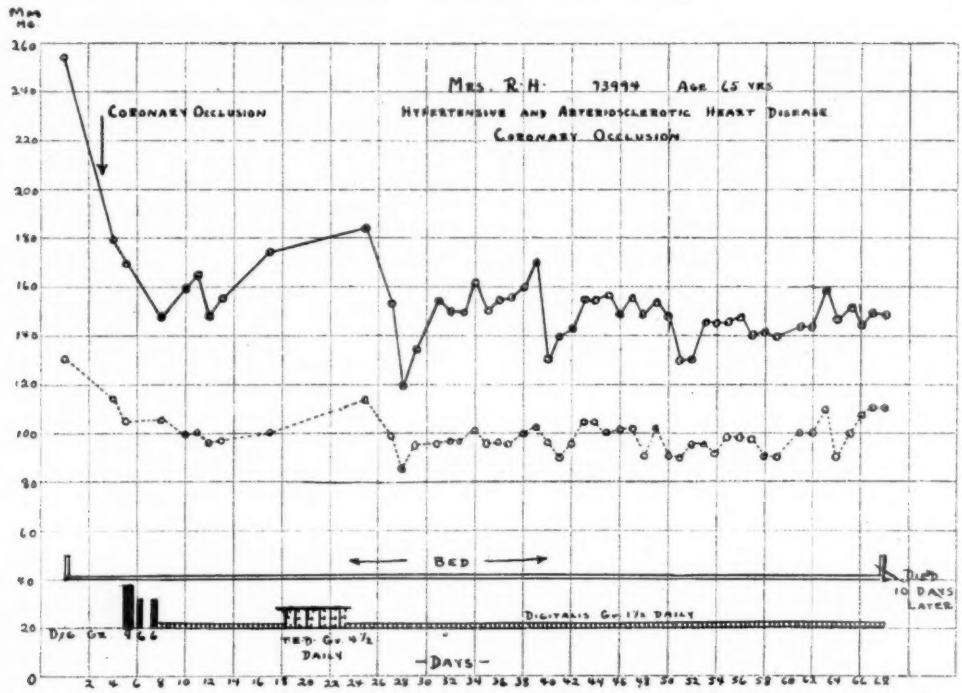


Fig. 2.—A drop in blood pressure following coronary thrombosis—the blood pressure remained low for two months after the coronary accident. Ten days after discharge from the hospital the patient died suddenly. T. E. D.—Theophyllin-ethylene-diamine.

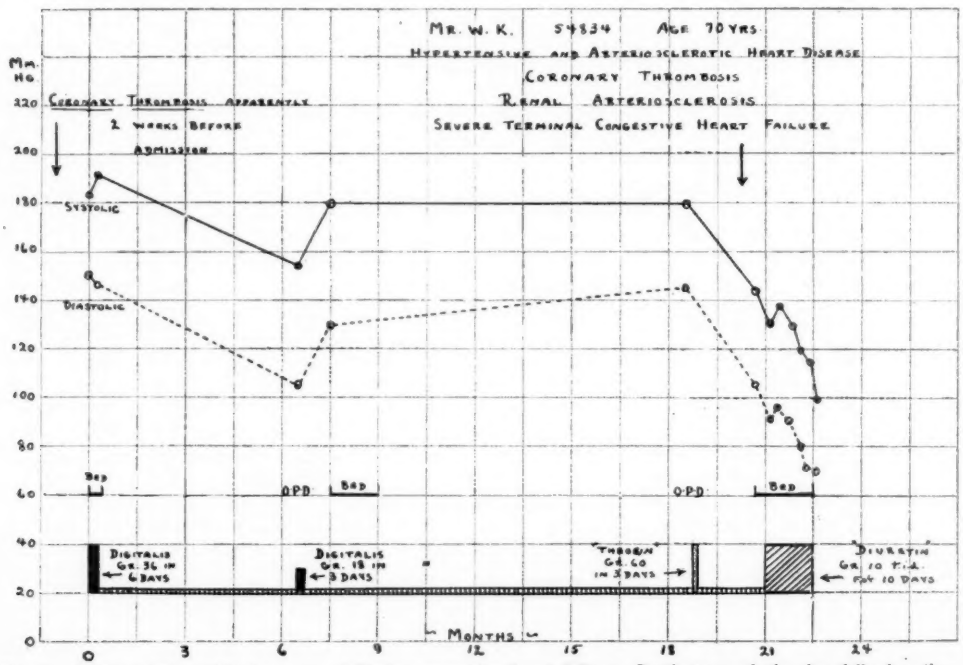


Fig. 3.—A sharp fall of blood pressure following congestive heart failure. Death occurred the day following the final blood pressure determination, and at autopsy definite evidence was found of a previous coronary thrombosis.

following coronary thrombosis is well known and requires no further comment (Fig. 2). Falling blood pressures in uremia and congestive heart failure (Figs. 3 and 4) are also matters of previous record,* though of less consistent occurrence than the fall noted in coronary occlusion.

patient happen to coincide with a low blood pressure reading.

Conclusions: (1) Marked systolic and diastolic blood pressure fluctuations occur in hypertensive patients with normal and subnormal renal function.

(2) In a fair percentage of these the cause

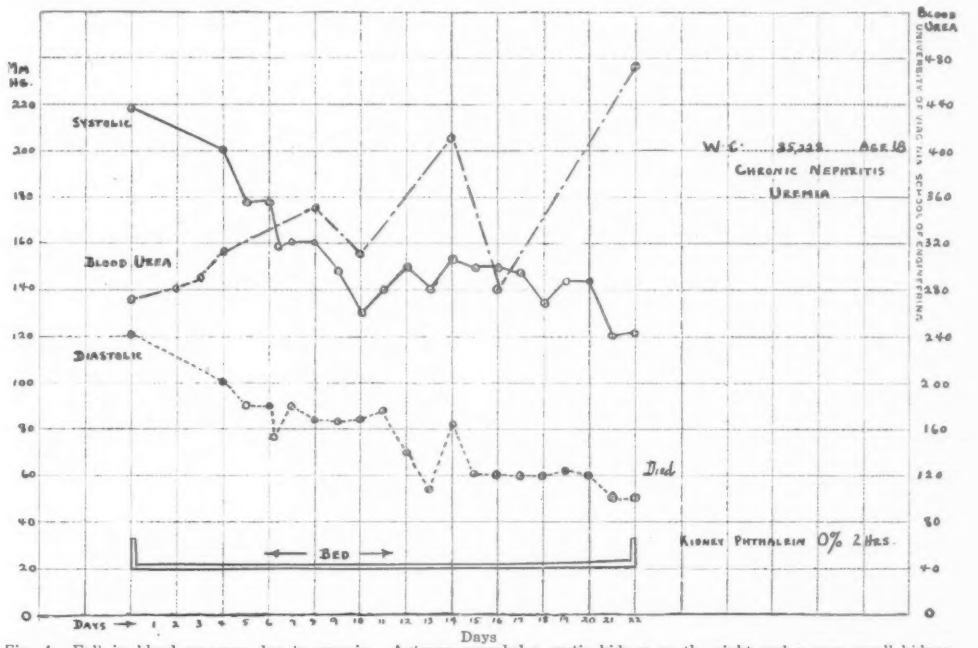


Fig. 4.—Fall in blood pressure due to uremia. Autopsy revealed a cystic kidney on the right and a very small kidney with chronic nephritis on the left.

One of the most important features of the entire study proved to be the not infrequent occurrence of a normal blood pressure reading associated with cardiac hypertrophy of hypertensive origin. Fourteen of the fifty patients had cardiac enlargement and at some time showed systolic pressures from 90 to 148 mm. Hg. In only three of the fourteen instances did the accompanying diastolic pressure exceed 90 mm. Hg. Ten of the fourteen had moderate to marked cardiac hypertrophy while the other four had a slight but definite increase in the size of the heart. Obviously the true cause of the cardiac enlargement might not be fully appreciated should a single examination of the

*In many instances the blood pressure rises with congestive heart failure but falls later frequently to remain lower after the patient improves.

of the variation may be postulated often, however, spontaneous variation occurs without explanation.

(3) Enlargement of the heart without obvious cause accompanied by a normal or near normal blood pressure should stimulate repeated observation.

(4) A careful case analysis and prolonged observation should precede the administration of any drug designed to alter blood pressure in hypertension. If uncontrolled, studies directed toward the artificial reduction of high blood pressure lack conviction.

Grateful acknowledgment is made to Dr. A. D. Hart and Dr. Robert King, University, Va., for their help with this work.

XUM

REFERENCES

1. Fishberg, Arthur M.: Hypertension and Nephritis. 1930. Lea and Febiger, Philadelphia.
2. O'Hare, J. P.: *Am. J. M. Sc.* 159:369. March, 1920
3. Mosenthal, H. O., and Short, J., Jr.: *Am. J. Med. Sc.* 165:531. April, 1923.
4. Ayman, David: *J. A. M. A.* 94:1214. April 19, 1930.
5. Fahrenkamp, K.: *Med. Klin.* 17:776. June 26, 1921.
6. Mueller, S. C.: Proc. Staff Meetings Mayo Clinic. 4:163. 1929.

DISCUSSION

DR. F. C. RINKER, Norfolk: I certainly have enjoyed the presentation by Dr. Wood. I agree with him thoroughly that we cannot take a hypertensive case and consider it to be a pathological case, that each individual case differs within itself, and that there are certain factors which may lead to hypertension. I also agree with him that we should certainly not rely upon drugs or utilize drugs to relieve hypertension unless we have studied that case individually.

I should like to ask Dr. Wood if, in closing, he could not group some of his hypertensive cases with relation to the endocrine glands and ask, also, whether endocrine therapy would not relieve some of them permanently.

DR. WOOD, closing the discussion: No obvious glandular dyscrasia occurred in any of the cases reported, nor have we used any tissue extract in the treatment of high blood pressure

I am not a therapeutic nihilist, however, and I do believe that certain blood pressure reducing drugs may be valuable in selected cases of hypertension.

CLOSED INTERNAL PNEUMOLYSIS: AN AID IN THE PNEUMOTHORAX TREATMENT OF PULMONARY TUBERCULOSIS.*†

By I. A. BIGGER, M. D., Richmond, Va.

Artificial pneumothorax is well established as a valuable procedure in the treatment of pulmonary tuberculosis and should always be given first consideration when collapse therapy is to be instituted. There is, however, one serious obstacle to satisfactory treatment by pneumothorax. This is the frequent presence of adhesions between the surfaces of the parietal and visceral pleurae, which are usually located over the most diseased part of the lung and prevent its collapse. Matson[1] estimated that 40 per cent of the failures in pneumothorax treatment are the result of pleural adhesions preventing satisfactory collapse. To further emphasize the importance of pleural adhesions, he presented statistics obtained by studying the results in eight hundred and fifty cases treated by pneumothorax. In those who obtained a satisfactory collapse, 48 per cent were clinically well and 21 per cent had died. In those in which a satisfactory collapse was prevented by adhesions, only 13 per cent were clinically well and 50 per cent had died. Saugman and Gravesen[2] reported 79 cases of whom 37 obtained complete pneumothorax and 42 had localized adhesions. Of the 37 who obtained complete collapse, 70.2 per cent were able to work and 23.4 per cent had died of tuberculosis. Of those showing localized adhesions, only 33.3 per cent were able to work and 66.6 per cent had died of tuberculosis.

It seems therefore that intrapleural adhesions form a serious obstacle to the success of pneumothorax and should be removed if possible. If not possible, another method of collapse should be considered.

The adhesions may be divided by open or closed internal pneumolysis. Closed internal pneumolysis was devised by Jacobaeus[3] and first described by him in 1913. He used an instrument similar to a straight cystoscope to visualize the adhesions and divided them by a long slender cautery introduced through another puncture. Unverricht modified the Jacobaeus instrument so as to give much better vision, and this modification is the one most commonly used today. The method was slowly accepted and in 1921 Jacobaeus was able to collect only about 100 cases, 40 of which he had done himself. During the past few years there has been a gain in popularity, and pneumolysis is now practiced in a number of American clinics. In 1929 Head[4] was able to collect 357 cases reported by twelve operators. However, 150 of these were operated upon by Jacobaeus and 100 by Matson.

ARMAMENTARIUM AND TECHNIQUE.

The Unverricht instrument with separate cannula for the cautery is very satisfactory when one has become accustomed to working with both hands simultaneously. However, Davidson[5] has recently perfected an operating thoracoscope which permits visualization and cauterization through one instrument.

Before attempting closed internal pneumolysis, it is necessary to have good stereoscopic films so that the position and attachment of the adhesions can be accurately localized. After the adhesions have been localized, the thoracoscope is inserted one or two inter-

*From the Department of Surgery, The Medical College of Virginia.

Read at the sixty-first annual meeting of the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

†These patients were from the Vanderbilt University Hospital and the Davidson County Tuberculosis Hospital, Nashville, Tenn.

spaces below them and usually in the posterior scapular line, although the point of insertion may vary considerably with the location of the adhesions. After the adhesions have been carefully studied through the thoracoscope and it has been decided that cauterization is possible, the cautery is inserted, usually in the axillary region, and placed against the adhesion under thoracoscopic guidance. A low current is then turned on and the cauterization proceeded with. The current should be turned off at frequent intervals to avoid overheating of the shaft of the cautery, as this may injure the tissues of the chest wall around the cannula and possibly the lung itself. As soon as the

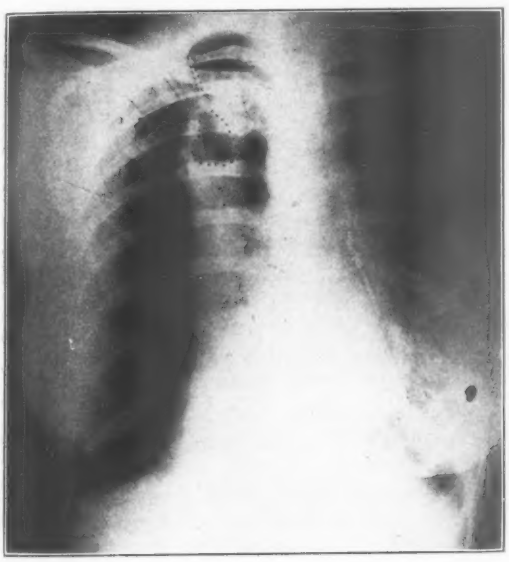


Fig. 1.—Roentgenogram made nine months after institution of pneumothorax, showing a large cavity held open by adhesions.

instruments are removed, pads should be firmly strapped in the interspaces over the puncture wounds to prevent subcutaneous emphysema. If this precaution is not taken, a large amount of air may escape into the tissues and cause considerable discomfort.

Indications

1. Pneumolysis is indicated whenever cord- or band-like adhesions are present which prevent the collapse of cavities or otherwise diseased lung tissue.

2. It is also indicated when the presence of such adhesions necessitates high intrapleural pressure to collapse cavities or when such adhesions cause pain or persistent cough after refills.

3. It is occasionally indicated when sheet-like adhesions prevent satisfactory collapse, but only when there is sufficient room between the lung and chest wall to permit satisfactory vision at all times during the cauterization.

Contra-indications

1. Fusion of the two layers of pleura should be considered a contra-indication to pneumolysis, as some injury to the lung is almost unavoidable and the danger of empyema either mixed or tuberculous is considerable.

2. Very large serous effusion should contra-indicate pneumolysis, for large collections of fluid may lead to sinus formation at the point of puncture with a resulting pyogenic empyema. Tuberculous empyema should be treated by thoracoplasty.

3. Disease in the other lung or other organs of the body would have to be sufficiently serious to contra-indicate pneumothorax to be considered a contra-indication to pneumolysis.

Complications

The only complication worthy of serious consideration is empyema, either mixed or tuberculous. About 25 per cent of the cases in the series collected by Head developed persistent serous effusions. Unless these terminate in

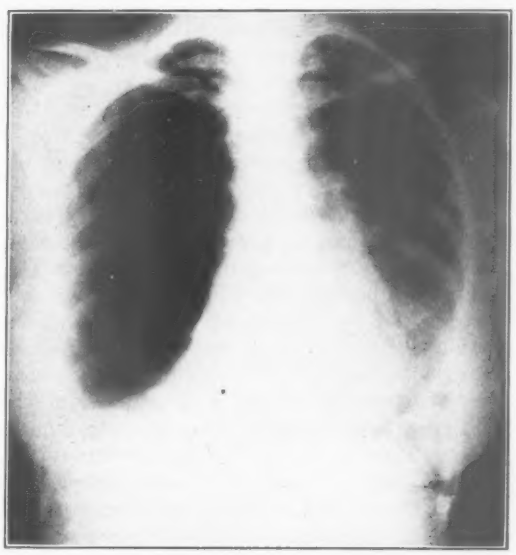


Fig. 2.—Roentgenogram made after the division of all except two apical adhesions. Cavity completely closed.

XUM

empyema, they are not of serious import. Furthermore, as stated by Head, about 50 per cent of these would have developed effusions without pneumolysis. Approximately 8 per cent of Head's collected series developed tuberculous empyema and 1.6 per cent developed mixed empyema. The mortality in the latter group is high, but tuberculous empyema may be cured by thoracoplasty or other measures.

Slight hemorrhage occasionally occurs, but only one case of fatal hemorrhage has been reported.

Extensive subcutaneous emphysema rarely occurs if care is exercised in the application of the dressings, and even when it occurs it is of no serious consequence.

When we consider the results obtained, it will be seen that the dangers from complications are relatively slight.

Results

In Matson's series of 100 cases of pneumolysis, 63 per cent were technically successful and 74 per cent were clinically successful. The late results are not given. In Gravesen's series of 26 cases, the late results were: 65 per cent were able to work and 31 per cent died of tuberculosis. In the 357 cases collected by Head, only 1.9 per cent died as a result of the operation.

Case Reports

I now wish to summarize the results obtained during the past eighteen months in eighteen cases treated by the Jacobaeus-Unverricht method of pneumolysis.

1. A satisfactory collapse was obtained in all cases, although other adhesions could still be demonstrated in several.

2. The duration of pneumothorax before cauterization varied from six weeks to nineteen months, with an average duration of eight months. There seemed to be little if any relationship between the duration of pneumothorax and the degree of reaction. The reaction seemed to depend largely upon the duration of the cauterization. The most severe immediate reaction occurred in a patient who had an extensive cauterization thirteen months after the institution of pneumothorax.

3. There was only one slight hemorrhage which was easily controlled by applying the cautery to the stump of the adhesion.

4. One patient who had no immediate reaction developed an elevation of temperature on the ninth day and several days later when the chest was aspirated was found to have a positive intrapleural pressure and purulent pleural fluid. Air was aspirated, but a manometer reading made the following day showed

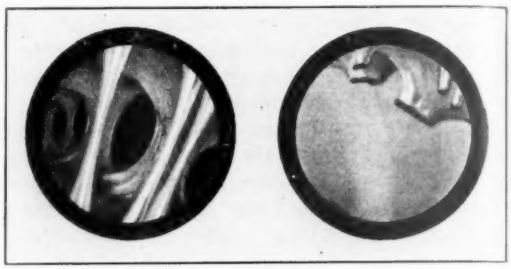


Fig. 3.—Endoscopic appearance of the adhesions shown in first roentgenogram before and after cauterization.

a recurrence of the positive pressure. This persisted and in spite of aspiration and irrigation of the pleural cavity the fluid became increasingly purulent, so intercostal drainage was instituted. The bronchial fistula and empyema may have resulted either from the cauterization of lung tissue in the adhesion or from devitalization of an area of lung adjacent to the shaft of the cautery. The delayed development of infection suggests the latter. It is probable that this patient will come to thoracoplasty, which would certainly have been necessary if cauterization had not been done, as she had two large cavities held open by heavy adhesions.

5. Fourteen patients or 77.7 per cent showed very definite improvement following the operation. Two or 11.5 per cent had few symptoms before cauterization, but each had a heavy cord-like adhesion attached to the lateral chest wall which necessitated positive pressure to obtain collapse. They therefore showed little symptomatic improvement. One or 5.5 per cent had a rather prolonged temperature reaction following cauterization but when last examined had a normal temperature and appeared to be definitely improved. Only the patient who developed empyema was made worse by the operation.

It is too early to attempt to evaluate the late results in this group of cases.

Summary and Conclusions

Intrapleural adhesions seriously interfere with the results in a large percentage of cases

of pulmonary tuberculosis treated by pneumothorax.

Division of adhesions therefore is desirable if a safe method is available.

Closed internal pneumolysis is relatively safe when used in well selected cases but is dangerous in cases with fusion of the two layers of pleura, where injury to lung tissue is likely to occur.

Cord- and band-like adhesions are easily and safely cauterized and should be severed when they interfere with collapse.

Sheet-like adhesions are occasionally suitable for cauterization, but cauterization should not be attempted unless the entire adhesion can be visualized.

If collapse is interfered with by short sheet-like adhesions or fusion of the pleural surfaces, thoracoplasty is indicated.

REFERENCES

1. The Cauterization of Adhesions in Artificial Pneumothorax by the Jacobaeus-Unverricht Method of Closed Pneumolysis. Ralph C. Matson. *Am. Review of Tuberculosis.* Vol. 19, page 233. 1929.
2. Pulmonary Tuberculosis (Surgical Treatment). J. Gravesen. Pages 53-54. William Wood and Co. New York, 1925
3. Endopleurale Operationen Unter der Leitung des Thorakoskops. H. Jacobaeus. *Beiträge Zur Klinik der Tuberkulose.* Klinische Beiträge. Vol. 35, page 1. 1915-1916.
4. Thoracoscopic Pneumolysis. Jerome R. Head. *Am. Review of Tuberculosis.* Vol. 20, page 692, 1929.
5. A Simplified Operating Thoracoscope. Louis R. Davidson. *Am. Review of Tuberculosis.* Vol. 19, page 306, 1929.

DISCUSSION

DR. DEAN B. COLE, Richmond: I wish to thank Dr. Bigger for his excellent presentation of this most interesting subject. I recall when Jacobaeus first came here some nine or ten years ago and demonstrated this method at Bellevue Hospital in New York. It was a most spectacular demonstration and at that time had not been used in this country, and was generally thought not entirely practical. The possibility of hemorrhage and empyema were thought to be outstanding contra-indications. As I recall it at that time Jacobaeus had done this operation on some one hundred patients and gave his results on some seventy-eight of these The results he reported were most convincing. In the last few years this operation has been done by a number of surgeons throughout this country and has proven a most useful adjunct to pneumothorax.

THE USE OF THE ROENTGEN RAY IN THE DIAGNOSIS OF BRAIN TUMORS.*

By J. L. TABB, M. D., Richmond, Va.

The average physician considers a brain tumor a rare condition; at least he sees only a few in his practice, but we must stop and consider how many of our cases of apoplexy, sudden death, impaired mentality, motor or sensory nerve involvement, if brought to autopsy, would reveal a brain tumor. The correct diagnosis of brain tumors is now made much oftener than in the past. This is probably not due to the fact that brain tumors are on the increase, but is thought to be due to the improved diagnostic technic, which allows their detection.

Fig. 1.—Calcified glioma, left frontal lobe.

Brain tumors are by no means rare. This fact is impressed upon us by a report of Coleman, who states that the statistics of the Hospital Division of the Medical College of Virginia for 1925 have "brain tumor" recorded as a diagnosis oftener than any other tumor of the body, except tumor of uterus. The diagnosis of brain tumor is recorded four times as frequently as tumor of the breast. Of course, all of the diagnoses were not verified, and in judging the frequency of brain tumors, it must be remembered that the Hospital Division is fortunate in having a large and well organized neuro-surgical department.

Only the part played in the diagnosis by the Roentgen ray will be discussed. A careful neurological examination is most important and should be made in all cases. It should be made before the X-ray examination, as valuable information may be gained as to which side of the skull to place next to the films, or the advisability of securing certain films from an angle not usually used.

*Read at the sixty-first annual meeting of the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

XUM

Aside from the pharyngeal pouch tumors it is very unfortunate that only a small percentage of brain tumors contain enough calcium to cause them to cast a shadow. When they outline, the diagnosis is usually certain. Calcification in the falx cerebri often occurs, is easily identified and, as far as we know, is without any definite clinical significance. Atheroma of the arteries, such as the circle of Willis, is rare, can usually be identified, but must be differentiated from a brain tumor. Calcification of the pineal gland is common in the adult and is not of any clinical significance.

Fig. 2.—Calcified brain tumor of left temporal lobe. Operation: Grayish tumor, soft, with a few small cysts containing fluid, probably glioma, left frontal lobe.

Let us now consider the non-opaque class of brain tumors; the ones which produce no shadow at all and which form the vast majority of tumors of the brain. Here we must depend on indirect signs—namely, the damage or change produced on the inner wall of the cranium, by the pressure resulting from the non-opaque tumor within or against the cranium and also on ventriculography and encephalography. The cranial changes may be roughly placed in four main groups:

1. Furrowing.
2. Separation of the sutures.
3. Absorption of the dorsum sellae.

Fig. 4.—Typical furrowing, due to increased intracranial pressure.

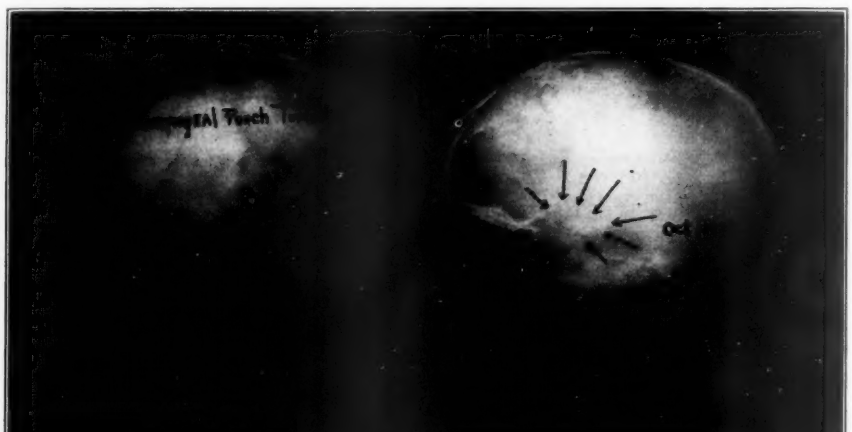


Fig. 3.—Left: Pharyngeal pouch tumor, January, 1923. Right: Same patient October, 1925. Note growth.

4. Bone destruction or bone proliferation. These will be taken up in the above named order.

1. By furrowing we mean a peculiar pitted appearance of the skull produced by the imprint of the convolutions of the brain against the inner table of the skull. It may seem strange that so delicate and soft a structure as

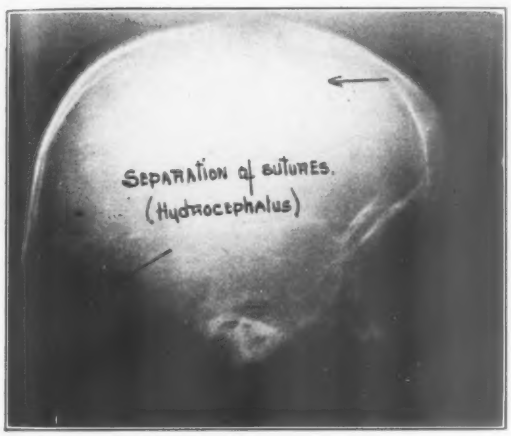


Fig. 5.—Separation of sutures from increased intracranial pressure. Patient age two years. Hydrocephalus.

the brain can wear away the hard, dense inner table of the skull. But there are other examples of this bone absorption produced by pressure of a soft tissue mass. An aneurysm will not only cause a destruction of the sternum but can even protrude through the opening. The vertebral bodies are often absorbed or destroyed from the same cause. Bone is frequently absorbed by pressure from an adjacent tumor and this peculiarity of bone to absorb under abnormal pressure is responsible for the rapid loosening of screws in a Lane's plate. Furrowing, then, occurs whenever the surface of the brain is pressed against the inner table of the skull and held there for a sufficient length of time for the convolutions of the brain to imprint themselves on the skull wall. The length of time necessary for these changes to show is still a disputed question. Schuller states that under favorable conditions the furrowing may be detected within a few weeks after the onset of clinical symptoms, but on the next page of his book the following is found: "The roentgenologic proof of the erosion of the inner surface of the skull is a sure sign of an increased intracranial pressure which has existed for a long time." Others believe that furrowing is a comparatively late sign, the increased pressure having been present for many months preceding the bone

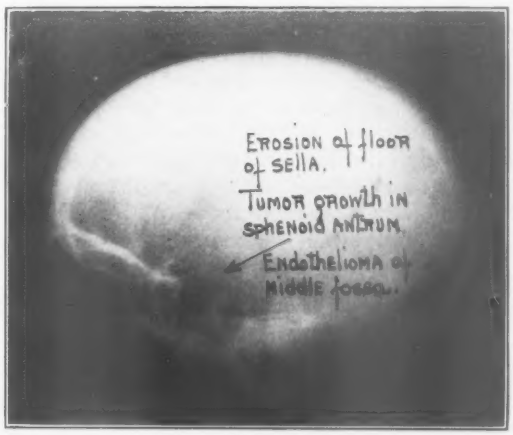


Fig. 6.—Note erosion of floor of sella and dorsum sellae and part of the growth in sphenoid antrum. Operation revealed endothelioma of middle fossa.

change. The writer, as yet, is not prepared to make any definite statement. My belief, however, is that the time must be expressed in months rather than in weeks. Practically all of the cases presenting this finding, which have

Fig. 7.—Absorption of dorsum sellae and left anterior clinoid process. The floor of the sella is depressed. At operation the intracranial pressure was too great to explore brain thoroughly. Needle punctures failed to locate the growth.

been examined by us, have had clinical symptoms for many months. Again, we have seen cases with very marked increased intracranial

pressure, and choked disc, which have certainly been present for a few weeks, which fail to reveal furrowing of the inner table. Furrowing, then is a pathognomonic sign of increased intracranial pressure.

2. Separation of the sutures. This condition usually occurs early in childhood when the sutures may be easily separated. This finding decreases in frequency as the age of the patient increases. After thirty years of age it is a very rare finding, and in old age is practically never present. Separation of the sutures is generally a sign of increased intracranial pressure, but a tumor adjacent to or in a suture will cause a localized separation.

3. Absorption of the dorsum sellae. (The

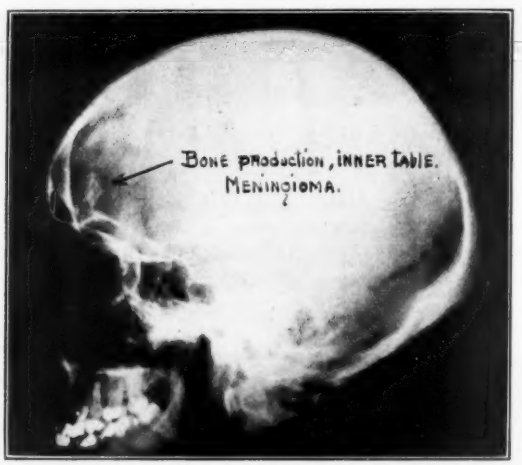


Fig. 8.—Bone production on inner table of skull, due to meningioma of right frontal lobe. Verified at operation.

appearance of the sella turcica also will be described under this heading.) The back of the pituitary fossa, or dorsum sellae, seems to bear the brunt of an increase in the intracranial pressure. The fact that the dorsum sellae has been absorbed does not necessarily mean that the tumor is adjacent to it. In fact, the dorsum may be completely absorbed as a result of a brain tumor as far removed from the sella as it is possible to have it.

The appearance of the floor of the sella turcica often gives valuable information. In severe intracranial pressure the floor often shows a moderate depression, but where the floor has been broken through or destroyed the indications are that the tumor is located in or adjacent to the sella turcica. In some instances the tumor mass can be clearly seen partially surrounded by air in the sphenoid antrum.

4. Bone destruction and bone proliferation. The purpose of this paper is to discuss strictly

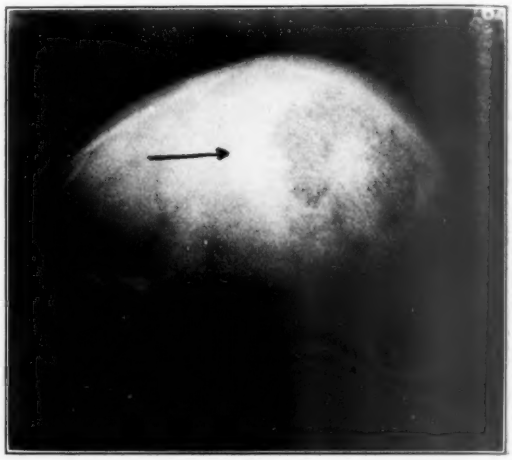


Fig. 9.—Here are both bone production and bone destruction. The fine bone spicules are easily detected on the stereoscopic films. Pathological report: Fibro-sarcoma, probably of dural or periosteal origin.

brain or meningeal tumors, and therefore the description of the bone destruction or proliferation caused by tumors of the skull, such as sarcoma, metastatic carcinoma, et cetera, or

Fig. 10.—Bone destruction due to infiltration of tumor. Endothelioma.

Paget's and syphilitic osteo-porosis, will be omitted.

When a tumor is adjacent to the inner table of the skull the pressure on the inner table

from the tumor may be so great that pressure atrophy takes place, resulting in an absorption of lime salts and a thinning of the bone in this location. Again, in malignant growths, the

Fig. 11.—Probably meningioma. Patient refused operation. Has projectile vomiting, attacks of unconsciousness, and is nearly blind. Wassermann negative.

skull may be infiltrated and the bone destroyed by replacement of the normal bone with neoplastic material. This produces on the roentgenogram a rat-eaten appearance. More often, however, the tumor adjacent to the inner table at first exerts only sufficient pressure to act as an irritant, and nature as a protective measure produces new bone. This results in a thickening of the inner table forming an endostosis and often fine spicules of bone similar to a periosteal sarcoma are noted. Endostoses and fine new bone striations, then, are very significant of meningiomata.

There are two other signs of brain tumor which at times may be noted on the plain X-ray films. The first is a displacement of the pineal gland and, in the absence of asymmetrical development of the cerebral hemispheres, a most rare condition, is pathognomonic of an abnormal mass within the cranium on the opposite side to which the pineal gland is displaced. The second sign is an enlargement of the internal auditory canal and is seen occasionally as a result of an acoustic nerve tumor.

A large percentage of brain tumors fail to produce any changes in the skull that can be detected on the plain films nor can any shifting of the pineal gland be seen. In these cases ventriculography and encephalography are of the greatest help. This procedure consists of withdrawing the fluid from the lateral ventricles or spinal canal and replacing it with air. In this way the lateral ventricles are clearly outlined and at times the third ventricle can be detected.

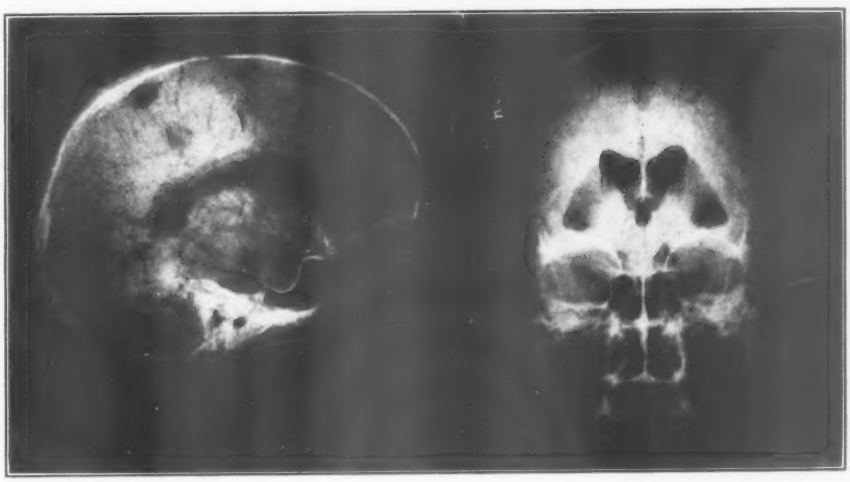


Fig. 12.—An encephalogram showing the appearance of normal ventricles and the symmetrical distribution of the air over the cerebral nemispheres. The ventricular septum is exactly in the median line.

The shape, size and location of the ventricles are seen and, by rotating the patient's head, it can be ascertained whether or not the air passes from one lateral ventricle through

the third ventricle into the opposite lateral ventricle. Ventriculography is the term used when the ventricle is filled with air by direct puncture of one or both of the lateral ventricles with subsequent X-ray. The term encephalography is used where the head has been X-rayed following the injection of air by way of a lumbar puncture. By this method, not only the ventricles are outlined but the air also spreads in the subarachnoid space over the cerebral hemispheres causing the convolutional impressions of the brain to cast their shadows on the X-ray film.

Fig. 13.—Left: Normal filling of left posterior horn. Middle: Poor filling of left anterior horn. Right: Ventricular displacement, to the right. Operative findings: Cystic glioma of left frontal lobe.

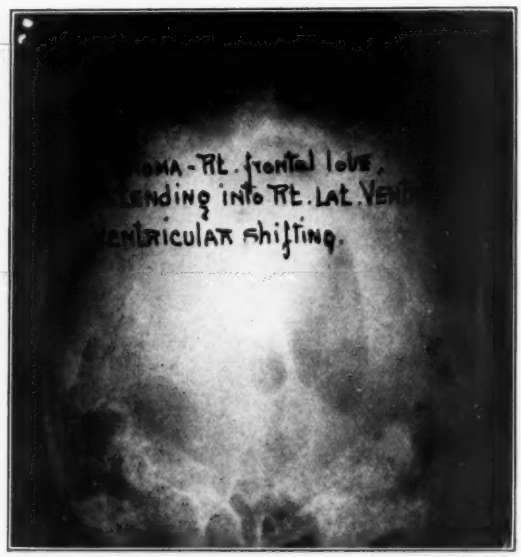


Fig. 14.—Glioma of right frontal lobe, extending into right lateral ventricle and causing the ventricular system to shift to the left. Verified by operation.

By ventriculography, then, we may ascertain the size, shape and position of the lateral ventricles and at times the third ventricle. By encephalography we ascertain the above mentioned points and also derive information concerning the subarachnoid fluid ways and the convolutions of the two cerebral hemispheres. It is obvious that a large subcortical tumor will obliterate the convolutions of the brain in the involved area and no air in the subarachnoid space will then be seen in that region.

The interpretation is based on the mechanical hydraulic effect which the tumor has on the ventricles or convolutional impressions. By mechanical effect we mean the shifting of the ventricular system, the compression of a ventricle or a portion thereof, a filling of the ventricle with the tumor mass, and the obliteration of the convolutional impressions. By hydraulic effect we mean the symmetrical or asymmetrical dilatation of the lateral ventricles, the dilatation of the third ventricle and the obstruction to the normal fluid ways of the ventricular and subarachnoid systems. Time does not permit a detailed discussion of the various appearances of the ventricles caused by the mechanical and hydraulic effect of the tumor. A few outstanding illustrations will have to suffice.

Displacement of the ventricular system to one side of the median line is almost conclusive proof of some abnormal mass in the cranium on the side opposite to which the ventricles are displaced. A compression of one ventricle or

an inability to fill it with air is indicative of a mass adjacent to or in that ventricle. Bilateral, symmetrical dilatation of the two lateral ventricles with obstruction to the passage of air from one to the other, indicates a tumor of the third ventricle obstructing the foramina of Monro. If air passes from one dilated ventricle to the other the obstruction is below the third ventricle and if the third

Fig. 15.—The left lateral ventricle is compressed and displaced downward and to the right due to a tumor above and to the outer side of the left lateral ventricle. Patient died the same day that air was injected and no exploratory operation or autopsy was performed.

ventricle is dilated the tumor is subtentorial.

Unilateral dilatation of a lateral ventricle with inability to fill the anterior horn points to a tumor adjacent to and obstructing the foramen of Monro on the side of the dilated ventricle. Numerous other abnormal findings resulting from the mechanical or hydraulic effect of a tumor could be mentioned but for sake of brevity the above will have to serve as illustrations.

There are other conditions such as arachnoiditis and cerebral atrophy which may now be diagnosed by a properly made encephalogram but, as these conditions are not brain tumors, they have not been discussed.

Ventriculography and encephalography, though very valuable, are not without danger and therefore these two methods are not suitable for hospitals where a competent neurosurgeon is not available at the time of the examination and for some hours afterwards.

McGuire Clinic.

Discussion

Dr. C. C. Coleman, Richmond: I think the papers of Dr. Tabb and Dr. Lyerly* must convince one that X-ray examination of the brain is a very important aid in the diagnosis of brain tumor. In the past few years the scope of air injections in the diagnosis of tumor has been greatly enlarged. In 1918, when Dandy proposed this for the localization of brain tumors, he used ventriculography almost exclusively. In recent years air has been injected through the lumbar spine in the case of epileptics, and in adults where the patient has marked subjective symptoms of cerebral origin. It has also been employed rather extensively in children. I think perhaps we have collected sufficient data on air injection into the lumbar spine to decide what cases should be given air injections. Parents with defective children often go from one clinic to another seeking relief for them. If they can, through an encephalogram, be convinced that the brain is undeveloped, or that it is the seat of some obviously hopeless anatomical condition, they accept with more complacency the advice not to waste their time and money in a futile effort to treat the child. In children who are moderately defective, encephalograms will often determine the site of the greatest brain involvement, and therefore, will have some bearing on the re-education agencies which are to be used.

Those who are familiar with either encephalography or ventriculography usually warn against its use promiscuously, feeling that neither is a simple or safe procedure under all circumstances. Unless one is prepared to operately promptly for brain tumor, a ventriculography may be a very dangerous procedure. Of course, encephalography is more dangerous than spinal puncture, and all who are familiar with brain tumor conditions, appreciate the fact that simple spinal puncture may be a very hazardous procedure.

A number of cases shown by Dr. Tabb are, of course, quite familiar to Dr. Lyerly and myself.

After all, clinical study of the patient is the most important part of the investigations, and clinical studies not only are essential to a clearer diagnosis, but necessary in order that the proper cases may be selected for air injection, whether the injection is done by the lumbar route or by placing air directly into the ventricles.

Dr. J. G. Lyerly, Richmond: I want to speak about one thing I do not believe Dr. Tabb mentioned. Dr. Naffziger has shown that in adults the pineal body is calcified in about 45 per cent of the cases. The X-ray will show this calcification. If there is a brain tumor in one hemisphere, that calcification will be shifted to the opposite side. That is of a great deal of aid in the localization of brain tumors; in fact, in some cases it will make the injection of air unnecessary, as the localization will be made by that.

Dr. Tabb, closing the discussion: Brain tumor is not a rare condition. Dr. Coleman has found that "brain tumor" is recorded at Memorial Hospital, Richmond, in 1925, four times as requently as "tumor of the breast."

I thank Drs. Coleman and Lyerly for their discussions. I mentioned very hurriedly, that shifting of the pineal body is pathognomonic of an abnormal intracerebral mass except in the very rare cases of asymmetrical development of the cerebral hemispheres.

*Dr. Lyerly's paper appeared in March, 1931, issue of the Monthly, pages 778-781.

XUM

THE CARE AND PROGNOSIS OF THE EXTRA-MURAL EPILEPTIC.*

By DAVID C. WILSON, M. D., University, Va.

The estimation of the number of persons subject to fits is still an impossibility. Yet the problem of fits is really the problem of epilepsy. It is probably true that every individual would develop a generalized convulsion with sufficient stimulation, but it is undoubtedly true that it is much more difficult to produce convulsions in one person than another dependent upon the presence or absence of a certain threshold lowering characteristic. This has frequently been shown experimentally.[1] Parker[2] demonstrates that a brain tumor in a certain locality may produce seizures in one individual while an almost identical tumor in the same locality in another does not; thus, showing that there is some inherent difference in this regard. Fay[3] believes that this difference is dependent on the water content of the intracranial cavity and the circulation of the spinal fluid. Others[4] believe that the hydrogen concentration of the body is the determinant; in other words, that a tendency toward alkalinity makes the epileptic more susceptible. Still others speak of the vasomotor instability of the epileptic, or consider convulsion an allergic phenomenon.

Besides the lowered threshold in those with chronic fits, however, there must be another element, namely, the sufficing stimulant. This irritating force is also important if we are to speak of the care of the epileptics, as therapy must be directed toward the characteristic that lowers the threshold, making the fits probable, or toward the irritant timing the convulsion.

There are approximately in the State of Virginia five thousand people having chronic fits,—that is one form of the epilepsies. From the surveys of certain localities such as the one recently made in Syracuse, New York, this would seem to be a very conservative estimate. We know that practically every physician has one or two among his patients, that our institutions for their care are over-crowded and that there are many hidden in the homes of the people who through fear of public opinion imbibe widely advertised nostrums without confessing the presence of the dread malady.

Howsoever, it is impossible that all so inflicted be institutionalized. Therefore, they must be treated outside the institution—in the home and by the general practitioner. All physicians working with the problem are convinced that the more nearly the life of the epileptic can be maintained on a normal level the less danger there is of his retardation. The process of ostracism, of separation from the group, and the narrowing of the outlook have a great effect on the personality, leading to disintegration. The best place to treat the disease is in the home, not only from an economic standpoint, but for the good of the individual patient. We should, therefore, get better results from the extra-mural therapy. It behooves us, then, to consider first what happens to the extra-mural epileptic, and, second, what forms of treatment can be carried on efficiently in the home.

The present study, as shown in Figure I, is based on seventy-five cases, diagnosed epilepsy, observed at the University Hospital during the last ten years.

Total No. of Cases	75	
Males	58	
Females	17	
Definite Heredity	27	
With Offspring	13	
Mentally Retarded	22	(29%)
Ward Patients	58	
Private Room Patients	17	

FIGURE I.

An attempt was made to discover what types of therapy had been employed and the present status of these individuals. Of this group eight were under twelve years of age. Five were aged fifty years or over. There were seventeen females and fifty-eight males. Twenty-seven had an immediate heredity, while thirteen had offspring. No cases were considered who had not had spells over a period of more than one year. One individual had had fits for thirty-two years. In thirteen cases there was a convincing history of trauma as a possible etiological factor. Twenty-two of the group were feeble-minded at the time of the first examination.

We were able to follow up to date from the seventy-five patients sixty-two. These are shown in Figure II.

Total No. of Cases	62
Cases Committed	5
Deceased	2
Improved and Working	25
No Change	22
Mentally Deteriorated	8
Of Twenty-five Improved Cases:	
No Treatment	6
Luminal	15
Bromide	4

FIGURE II.

*Read at the sixty-first annual meeting of the Medical Society of Virginia in Norfolk, October 21-23, 1930.

Five had been committed to state institutions. Two were dead. Twenty-five, a third of them, were working and apparently improved. The twenty-two feeble-minded showed no change, and eight new cases had deteriorated. Of the twenty-five improved cases, six had had no treatment and fifteen had luminal and four had bromides.

This study would suggest that about one-third of the epileptics could be improved and maintained as useful citizens while two-thirds are doomed to deterioration or to become a burden to the community and the State. However, thirteen of these cases had a definite history of trauma and three of them were luetics. Also, there were some whose spells had begun so late in life that arteriosclerotic changes had probably set in—cases of epilepsia tarda, according to Reisman.[5] Others were so young that the outcome of their malady was in no way determinable. Therefore, all cases not having had spells over five years; whose spells had started after fifty years of age; who were under twelve years; who had any known etiological factor; who had been sent to an institution; or, finally, whose present status was not definitely known, were eliminated. In other words, we selected a group whose disease process had been in existence at least five years and who had existed in the community throughout that period to determine the prognosis of the idiopathic extra-mural epileptic.

There were thirty such cases. A few facts about them are shown in Figure III.

Idiopathic Epilepsy of Five Years' Duration	
Total No. of Cases	*30*
Heredity	16
Spells At Least Once a Month	25
Mental Retardation	7
Improved and Working	16

Figure III.

Sixteen showed a clearly defined heredity. Twenty-five had had spells at least once a month when first seen in the Hospital, yet at the present time only seven showed mental retardation. Sixteen were apparently improved and were now able to maintain themselves. It is also interesting to note that all of the sixteen improved cases had been consistent in their therapy. The majority were on luminal while others used bromide.

In this group, then, of idiopathic epileptics living in the home, at least fifty per cent escaped degeneration. This is a very small series, but, when we remember that these are extra-mural cases having spells over five years, the results have some significance. It is also encouraging to note that the therapy employed, while often scanty, was apparently of some benefit. On the other hand, none of these cases was entirely relieved and most of them dared not stop their medication.

It would seem, then, that more should be accomplished, for, while some of the cases are improved, none are free from the menace of an attack. There were no cures.

In the beginning of the paper it was stated that any therapeutic approach must be an attempt to raise the convulsion threshold or to remove the exciting stimulus. A great deal of work is being done along both lines. Diethelm,[6] following the work of Ulrich, has shown that by controlling the chloride-bromide ratio until a thirty-three per cent bromide substitution is obtained, this drug can be used with good results over a long period without toxic symptoms and with some curative value. To do this, one must follow the blood bromide over a period long enough to establish this substitution and then maintain the bromide intake at this level. The production of a relative acidosis by starving has been tried and found of some value,[7] but this form of therapy has given place more recently to the use of a diet high in fats and low in carbohydrates, thus producing ketone bodies in the blood. At first this ketosis was thought to allow an acidosis to be produced, thus raising the threshold and reducing the possibility of convulsion.[8] Lately, however, this ketosis is thought to act by reducing the intra-cellular water,—in other words, to work by producing dehydration. Helmholz,[9] in a recent study, finds on the other hand that he gets results in children with the ketogenic diet that cannot be explained by dehydration, and claims thirty per cent well over a five-year period with others definitely improved. Other writers do not get such good results even in children, while in adults the diet has very little if any effect, except, perhaps, as a method of reducing the fluid content and as an aid in other forms of therapy.

Fay has been the pioneer in dehydration therapy. He noted the cortical atrophy found in epileptic brains, the lakes of spinal fluid over the cortex at operation on epileptic subjects, and the fact that convulsions were produced by flooding the brain with water. He so treated a series of cases by merely limiting the fluid intake to three or four hundred c.c. of

XUM

fluid daily. He has shown lesions in the Pacchionian bodies which seem to obstruct the outflow of spinal fluid and by means of the encephalogram that large numbers of epileptics have either cortical atrophy or an adhesive arachnoiditis, which was in turn causing obstruction to spinal fluid circulation. His results have apparently been very good, and he seems to feel that the control of the fluid balance is the control of the convulsive threshold and the answer to the epileptic therapy. Fay's ideas regarding blockage of the spinal fluid circulation can best be explained by referring to the diagram taken from his article.

Patterson[10] has shown that as a group a larger percentage of epileptics show allergic phenomenon than normals. Cures of convulsions have been reported by removing substances from the environment which cause allergic reactions. Pierce Clark[11] has emphasized the psychogenic factors in the disease and is quite an advocate for the maintenance of normal living conditions for the epileptic. He has given us a better understanding of the epileptic personality by psychoanalysis. Foerrester and Penfield[12] have studied the post-traumatic cases with much care. They localize the lesion by observation of the attacks and electric stimulation of the exposed cortex, the irritating scar, remove it by a clean cut, thus producing an innocuous cavity. The cortex has been divided by them into irritating areas where an old scar will produce a certain type of onset to the convulsion. They then study the cortex by encephalograms for a localized atrophy; if present and not in a vital spot, it is removed. Their results are very encouraging and offer much to this rapidly increasing group of subjects.

During the last year of the University Hospital an attempt has been made to follow a definite line of study in all cases with fits. The environment and the mental age of the patient are first considered, because we feel that a markedly deteriorated case offers little from therapy. Next, a complete neurological survey is made which is followed by an encephalogram. This latter demonstrates the presence or absence of general cortical atrophy, of adhesive arachnoiditis, localized atrophies or asymmetrical ventricles. In the presence of marked cortical atrophy it is felt that the cause of the convulsive state is demonstrated and that very little can be done to improve the patient, although he may be maintained at his present level. However, if the atrophy is localized and in any way can explain the patient's seizures, exploration is certainly warranted. If the history suggests allergy, skin tests are done, and, finally, an attempt is made to readjust the patient to his home environment. In children with cooperative parents, a ketogenic diet is prescribed, while in adults if sufficient time is available the bromide substitution is attempted. If bromide cannot be used, luminal is employed. In all cases dehydration is prescribed by limiting the fluid intake to five to six hundred c.c. daily. There have been fifteen patients consistently treated as shown in Figure IV.

REPORT OF CASES TREATED LAST YEAR

Total No. of Cases	*15*
No Improvement	3
Improved	12
Bromide and Dehydration	3
Ketogenic and Dehydration	2
Luminal and Dehydration	4
Allergic	2
Psychogenic	1

FIGURE IV.

Three of these have shown no improvement. Luminal, bromide, ketogenic diet and dehydration have all been tried without success. They were adults, however, among whom no claims for ketosis are made. Also, it must be stated, dehydration was not consistently enforced. Twelve, however, have shown definite improvement. One seemed to be a *bona fide* case of allergy and has had only one spell in six months. Still another showed an eosinophilia with a history suggestive of sensitization. The others responded mainly to dehydration, although in each case the therapy was mixed. However, from the results in these cases it would seem that the control of the fluid intake was a factor in their betterment.

Epileptics, then, showing no abnormalities in the encephalogram and no marked deterioration can be treated at home with some hope of success. If one form of therapy fails, we have still others in our armamentarium. The cases with cortical atrophy should respond to dehydration, and quite a number may be found to be post-traumatic, where trauma was not formerly suspected.

In conclusion, the home and the normal environment is undoubtedly the proper place for the undeteriorated epileptic. The epileptic personality, as shown by Notkin,[13] is a product of his fits and his environment. Therefore, by the use of the ketogenic diet in the children, when feasible, by well controlled bromide

therapy, by luminal, and, perhaps, above all, by the control of the fluid intake a great deal can be done for this large class of suffering humanity.

BIBLIOGRAPHY

1. Elsberg, C. A., and Pike, F. H.: "The Influence of a General Increase or Diminution of Intracranial Pressure Upon the Susceptibility of Animals to Convulsive Seizures." *Am. J. Physiology*, 76:593-597. May, 1926.
2. Parker, H. L.: "Epileptiform Convulsions. Incidence of Attacks of Intracranial Tumors." *Arch. of Neur. & Psy.* 23:1032-1041. May, 1930.
3. Fay, Temple: "Some Factors in the Mechanical Theory of Epilepsy with Especial Reference to the Influence of Fluid and its Control in the Treatment of Certain Cases." *Am. J. Psychiatry.* Vol. VII. No. 5. March, 1929.
4. McQuarrie: "Epilepsia in Children: Relationship of Water Balance to Occurrence of Seizures." *Am. J. Dis. of Children.* 38:451-457. October, 1929.
5. Reisman, D., and Fitz-Hugh, F., Jr.: "Epilepsia Tarda." *Annals of Int. Med.* 1:273-282. November, 1927.
6. Diethelm, Oskar: "The Bromide Treatment for Epilepsy in the Dispensary." *Arch. of Neur. & Psy.* 664-667. March, 1929.
7. Geylin, H. R: "Factors of Ketogenic Diet." *Annals of Int. Med.* 2:678-681. January, 1929.
8. Peterman, M. G.: "Relation of Clinical Influences, Including Diet and Endocrine Disturbances to Epilepsy." *J. A. M. A.* 90:1427-1429. May, 1928.
9. Helmholz, H. F.: "Eight Year's Experience with the Ketogenic Diet in the Treatment of Epilepsy." *J. A. M. A.* 95:707-709. September, 1930.
10. Patterson, H. A.: "Protein Sensitization in Epilepsy. Study of One Thousand Cases and One Hundred Normal Curatives." *Arch. of Neur. & Psy.* 17:427-443. April, 1927.
11. Clark, L. P.: "Further Contribution to Psychology of the Essential Epileptic." *J. of Nervous and Mental Dis.*, 63:575-585. June, 1926.
12. Penfield, Wilder, and Foerrester, O.: "The Structural Basis of Traumatic Epilepsy and Results of Radical Operation." *Brain.* Vol. 53: Part 2:99. 1930.
13. Notkin: "Epileptic Manifestations of a Group of Schizophrenic and Manic Depressive Psychosis." *J. Nervous and Mental Diseases.* 69:494-521. May, 1929.

DISCUSSION

DR. J. H. BELL, Colony: I wish to compliment Dr. Wilson on his very excellent handling of this exceedingly complicated and difficult medical problem. Epilepsy is not a disease entity, but a syndrome, and the problem of the fit, as he states, which is purely symptomatic, is the problem of epilepsy. And why some persons should react by a convulsion to a brain tumor or cerebral hemorrhage in a given locality, while others do not, can be most reasonably explained by a difference in susceptibility in the finite structures of the nervous system to irritation, in different persons. We know that cerebral hemorrhages in some cases will produce convulsive disorders, while others with the same amount of hemorrhage in the same locality escape, and conversely there are cases on record in which a cerebral hemorrhage relieved the convulsions, possibly by interrupting the transmission of impulses through the cortico-spinal tract. Dr. Wilson has emphasized the point that there must not only be a lowered resistance, but also a sufficient stimulus in the production of the convulsive phenomena. It is important then to know not only how the trigger is pulled, but also what pulls it, and the explosive theory, which sets forth that there is a general widespread change in the brain chemistry, dependent upon sudden metabolic reverses, such as may be produced by anaphylaxis, anoxemia, and alkalosis, seems the most fruitful for investigation at this time. The types of cases received into institutions are usually well advanced in deterioration and are not the most promising for either investigation or therapy, as the majority of them, if carefully studied, neurologically, will show symptoms of lesions of the central nervous system, and at postmortem we find that grave, pathological changes have taken place in the brain and meninges perhaps many years earlier, such changes as flattening of the frontal lobe, shallowness of the sulci, dilatation of the ventricles, petechial or large hemorrhages and arachnoid adhesions. More hopeful results and positive findings of importance to the therapy can therefore be expected in the study of a large series of extra-institutional epileptics who are not deteriorated and who do not have such grave pathology.

I think Dr. Wilson is performing a real service in the investigation of this type, and while his series of cases is perhaps yet too small for any very definite conclusions, he has certainly been able to show the value of the therapy he is outlining. It is a well-known fact that deficient oxygen intake, deficient oxidation of waste products in the body, and a general lowering of the body-tone, are important factors in the production of seizures. And the institutional epileptics who carry on most successfully are those that can be kept in the open air and engaged in occupations that require a moderate output of physical exertion: muscular activity serving to oxidize the waste products, to increase the intake of oxygen, and to strengthen the body generally. The production of acidosis by ketogenic diet is, I think, only warranted in children who are having a number of seizures daily. The starvation of older epileptics to the point of acidosis for a temporary remission of seizures is not good therapy, the patient is not receiving a sufficient quality or quantity of food elements to replace normal cell destruction, his general resistance is lowered, he becomes more susceptible to infectious diseases and infections, and his last state may be worse than the first. Study of the allergic reactions in epileptics seems fruitful, and I would like to see more of this done on extra-institutional cases; also investigation of the effects of hypo-function of the pituitary and thyroid glands. The psychogenic factor is, as Dr. Wilson states, a most important one, and through psychiatry we have been able to learn much of the epileptic's personality that was heretofore hidden.

The neurological mechanism of epilepsy, has, I think, been accentuated in the study of this disease somewhat to the detriment of valuable and, perhaps, most startling revelations that may come through an equally searching investigation of the bio-chemical factors, and I very much hope that in the future this phase of the disease may receive its share of attention.

In closing, I wish again to express my appreciation for Dr. Wilson's very interesting and instructive paper and to express the hope that he may be able to extend his investigations to include a search-

XUM

ing study of the explosive theory of convulsions, which has for its hypothesis a sudden and widespread change in the chemistry of the brain, due to such sudden metabolic changes as may be produced by anaphylaxis, anoxemia, and alkalosis.

DR. J. S. DEJARNETTE, Staunton: I have been treating epilepsy for forty years at the Western State Hospital at Staunton. At the same time I have been able to read the Bible about the man who fell into the water and fell into the fire, who came to the disciples and they could not do a thing. The only thing I have heard that helped him was when he came to Christ; He waved his hand, and the man was cured. Christ said it was done by faith. I have seen very few epileptics cured. In treating epilepsy our treatment is this: Give luminal, 1½ grains, at bedtime and give salts Tuesday and Friday mornings; give no meat for supper. By doing that we find we have cut out seventy-five per cent of the convulsions.

Now, what is epilepsy? The old definition was that it was a sudden, local, violent, occasional discharge from the cerebral cortex, that it was a chronic disease and generally incurable. When these people come to you you find that one symptom is that they all say they are getting better, and another is that they are great Bible readers; while the manic-depressive is a great sweeper with a broom.

I want to give you this parting shot—if you give luminal to an epileptic, give it regularly. If you stop it he will go into what is called status epilepticus, and if you once have seen it you do not want to see it again. He goes into coma; the temperature goes to 107; and he passes out. I have tried everything I know of, but often they pass out. I believe it is one of the diseases in which the temperature continues to rise after death.

CONGENITAL HYPERTROPHIC STENOSIS OF THE PYLORUS.*

By WILLIAM B. MCILWAINE, M. D., Petersburg, Va.

In reviewing the early and modern literature on the subject of congenital hypertrophic stenosis of the pylorus, one is struck with the gradual, but persistent trend of the writers and investigators to be less and less certain of what constitutes a correct diagnosis.

With the influx of physicians dealing exclusively with pediatric problems, the subject was one of great interest and much literature, largely because of the high mortality of the operative procedures then used. There was a great deal written about these procedures and the unsatisfactory results. Not so much was written about the diagnosis presumably because the symptoms of the disease were to them evident. However, after the introduction of the Rammstedt operation and some of its slight modifications, the mortality dropped so low that most pediatrists advised operation as soon as the diagnosis was positively, or in some cases even probably, arrived at.

*Read at the sixty-first annual meeting of the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

During this period an infant with the so-called classical symptoms of projectile vomiting, loss of weight, constipation, visible waves of peristalsis and a questionable mass in the abdomen was diagnosed as a case of hypertrophic stenosis of the pylorus, and operated on with a percentage of successful results that was indeed gratifying. During this period Stenosis and Operation held the ascendency in the medical mind.

However, medicine being as it is and should be, a restless sea ever changing, never satisfied, the scientific mind searching for more light on the subject of causes, the pleasant pastures of classical symptoms—stenosis, operation—were rapidly invaded by the advent of the knowledge that a drug, atropine, and the feeding of a formula of thick cereal would prevent vomiting and so enable these little ones to gain, grow and develop. The medical mind, through its literature, began to swing slowly at first, but like the oft quoted pendulum, gained momentum until the picture changed to one of classical symptoms—Spasm of the pylorus, Medical treatment. For the past few years, judging from the literature on the subject, the minds of the mass of writers are in a turmoil,—some claiming on the one hand that operation, early and without procrastination is the best therapeutic measure for these infants, others, that operation is rarely ever needed, some even going so far as to report eight out of ten cases of hypertrophic stenosis of the pylorus cured by the use of phenobarbital (commonly called luminal), and others by the use of vitamin B, plus other time honored measures.

Naturally, one wonders why the divergent opinions on a subject which years ago were thought to be a closed one. The reason is evident from the literature. It is due to the fact that the pathological anatomy of the condition, instead of clearing up the subject, thus far is the causus belli of the uncertain, wavering and widely divergent opinions.

There used to be only the question of stenosis of the pylorus and spasm of the pylorus, but more recently two other claims are thrown into the already hectic struggle which bids fair to make the next decade a gorgeous battlefield as to the cause of the so-called hypertrophic stenosis of the pylorus.

Briefly outlined, the four main theories as to the underlying cause of the condition are:

1. A real, genuine, congenital stenosis of the pylorus, consisting of a ring of hard fibrous muscle tissue occluding the pyloric orifice.

2. A spasmodic condition of the muscle fibers around the pylorus by the constant state of contraction due to the irritable nerve endings, causing an occlusion of the pyloric passage.

Under one and two, I will quote from a paper of Dr. C. Ulysses Moore et al., of Portland, Ore., as follows: "The underlying pathology considered responsible for these symptoms is spasm of the pylorus with or without an accompanying hypertrophy. Arguments have waged for years as to whether the hypertrophy preceded the spasm or the spasm caused hypertrophy.

"The adherents of the tumor theory believe that it is due to faulty embryonic development which results in an actual stenosis of the pyloric orifice. This leads to a definite hypertrophy caused by the increased effort necessary to force the food through the smaller orifice. However, the idea of Sauer seems more tenable: 'In the fetus there is no pyloric valve as in the segment, known as the canalis pylori.' Wachenbein showed that the diameter of the pyloric musculature of the fetus is often greater than that in infants a few weeks old. In his opinion this furnishes an 'analage' for subsequent pyloric growth. A persistence of this transient, normal condition gives a primary anatomic basis for the origin of stenosis. In addition, the infolding of the mucosa may contribute appreciably to the obstruction by producing a valve-like closure.

"The persistence of hypertrophy months after spontaneous recovery or years after posterior gastro-enterostomy proves, according to Sauer, that the hypertrophy is not dependent on the spasm. The clinical picture on the other hand is dependent on the spasm, whether accompanied by hypertrophy or not. The numerous autopsies, performed on infants who died of other causes months after symptoms of stenosis had spontaneously disappeared, showed a persistent hypertrophy, which proves that hypertrophy alone need not elicit symptoms. Koplik reported never having seen a case of hypertrophic stenosis with palpable tumor in which there was no spasm. The spasm as well as the hypertrophy affects not only the pyloric ring, but Balan holds that it may involve the entire pyloric portion of the stomach, while Pehu and Pinel report in their exhaustive studies that there is hypertrophy of the whole stomach. Heubner believes the spasm to have its seat not in the pylorus but in the entire stomach wall. He states that this gastro-spasm occurs in predisposed infants whose entire gastric muscularis is hypertrophied.

"Carlson and Ginsberg report either a hypertonicity or hypermotility of the empty stomach of infants with congenital pyloric stenosis, pylorospasm, and chronic vomiting. Workers on the nervous control of the pylorus agree that the vagi and splanchnics may be either motor or inhibitory to this region, depending upon the existing tone of the pylorus. So, when once started, we may easily have a vicious circle. The early degenerative change along these nerve pathways, either the splanchnic or vagus or both, lead to an increased nerve stimulus to the pyloric antrum with hypermotility and partial obstruction."

In addition to the two theories above, a third and fourth have been added as follows:

3. A general irritability of the entire central nervous system, especially of stomach, brain, and vomiting center therein.

Under three I shall quote the above named authors: "Under this hypothesis, hypertrophic pyloric stenosis is considered simply as an advanced degree of pylorospasm. Pylorospasm and pyloric stenosis are the dominant features of a general state of hypertonicity.

"The autopsy findings upon which these tumor and hypertrophy theories are based is rather variable. In general the stomach is dilated, often to twice its normal size, and its wall is thickened or not according to the degree of distention. Histopathological studies of the pylorus have shown that the circular muscle fibers are chiefly involved. Strange to relate, no such study has included the nerves controlling this portion of the gastro-intestinal tract. In spite of this lack of neurological study, Elterich states that 'the majority of writers attribute the disorder to an imbalance of the autonomic or involuntary nervous system, which, of course, consists of two divisions, the parasympathetics and the sympathetics, the functions of which are opposing.'"

Under the theory of irritation of the vomiting center, I shall also quote from a paper of Dr. E. J. Barnett, of Spokane, Wash.:

XUM

"The 'vomiting center' in the brain must be involved in this congenital lesion, otherwise it would be difficult to explain why phenobarbital is apparently so specific for the control of the projectile vomiting. It has formerly and usually been stated that the vomiting in pyloric stenosis and pylorospasm is entirely mechanical in the origin. We must now appreciate that the vomiting in this condition may also be cerebral and influenced by excitability of the 'vomiting center.'

"This 'vomiting center' has normally streaming into it afferent emetic impulses, the most important path being along the vagus, and has discharged from it efferent impulses. In this way the 'vomiting center' coordinates in an orderly sequence the various movements and inhibitions necessary for emesis. The 'vomiting center' in cases of pyloric stenosis must become more sensitive from gastric irritation of the vagus or sympathetic nerve endings, and vomiting results."

4. A lack of vitamin B in the mother before the birth of the child and its effect on the motor nerves in the pylorus of the infant.

Under four, I quote again from Dr. Moore: "While studying the various effects of a lack of vitamin B complex on albino rats, we were surprised to find, especially on the young of the second generation, a clinical picture characterized by an enlarged and very firm abdomen, accompanied by extreme emaciation. At autopsy the stomach was found to be enlarged to several times its normal size and to be so packed with milk curd that on extrusion the curd made a perfect cast of mucosa. As rodents cannot vomit, there had been repeated packing of each day's nursing into the distended stomach. An examination of the vagus nerves of these animals showed myelin degeneration, a finding typical of beriberi. In cases in which the gastric distention was mild or cured by atropine, the animals later developed polyneuritis.

"Pyloric obstruction appears, therefore, to be one manifestation of vitamin B deficiency with resulting defective myelinogeny.

"The diet of the average American mother is normally very low in vitamin B, although she needs during pregnancy and lactation for the protection of her infant three or four times the amount of this factor necessary for her own well-being.

"In our laboratory a deficiency of the vitamin B complex in the maternal diet of rats has produced pyloric obstruction in the young. Other phases of the deficiency found in the same individuals or littermates are hemorrhage and polyneuritis.

"In the animals thus affected the motor nerves to the pyloric region show myelin degeneration, the typical pathology of vitamin B deficiency."

To resume the discussion of clinical hypertrophic stenosis of the pylorus, naturally if the infant is not born with a ring of hypertrophied muscle around the pylorus, it cannot be called a congenital affair, and we must look to spasm alone causing the symptoms. The main clinical argument against a congenital stenosis is that according to most authors the main symptom, vomiting, does not occur until the second or third week, and yet it does not seem plausible that a spasm would start all of a sudden, out of a clear sky, two or three weeks after birth, especially as most of these babies are breast fed from birth until vomiting begins, and so there is no evidence of any mechanical irritation of the nerve endings around the pylorus.

The theory of the whole affair, being of central origin in the vomiting center in the brain, seems rather illogical in the face of autopsy reports as also the vitamin B theory, though reports on this theory will be awaited with interest as, should it be proven by other experimental work, and autopsy reports, it will give us a useful weapon for preventing this condition. It is very evident then why the varying ideas as to diagnosis and the uncertainty of diagnosis arise when the underlying cause is vague itself. Two decades ago it was—Stenosis, Operation. During the last decade—Spasm, Medical treatment. We are now entering a decade that may be—Central nervous system, Drugs, or Vitamin deficiency, Prevention.

To arrive by such a circuitous route at practical facts seems quite a shock but, after all, theories are just theories until proved, and the condition of hypertrophic stenosis of the pylorus remains, at least up to the present writing, a fact and quite a disturbing one both for baby and doctor.

We have then an infant here four weeks old with a history of vomiting everything it eats, at times forcibly, a loss of weight from birth of several pounds, and a history of no normal stools, maybe movements but not normal.

On examination we find some emaciation,

XUM

definite waves of gastric peristalsis; on palpation we feel or think we feel a small mass in the abdomen on the right side, between the lower border of the ribs and the umbilicus.

What are we going to do? Most authors, in their minds uncertain, would say, "Let's give it a try on medical treatment, not making a definite diagnosis, but waiting for the therapeutic test." This may be all right, but it is not good medicine. The best medicine would be, as I think our motto should be "Be sure you are right then go ahead."

What then can aid us? The X-ray? I could quote here conflicting opinions that would leave you in a more befuddled state than Southside Virginia moonshine, but I will just say that opinions vary as widely as to its value as do the opinions as to the pathology. Some say it is of great value, some of no value, and some damn it with faint praise. Well then, if we have nothing to help us in our diagnosis except the individual case history and examination, what is of significant value in a differential diagnosis between stenosis of the pylorus which diagnosis means in my opinion, operation, and spasm of the pylorus, which in my opinion means, medical treatment? I can think of only two. First, no normal stools. From the literature and in my own meager experience, a case of congenital hypertrophic stenosis of the pylorus gives a history of having had no normal stools. A spasmodic condition does not give such a flat, unequivocal history as to this point.

Second, the palpation of a constant mass about the size of a peanut to the right, a little above the umbilicus.

Both conditions, spasm and stenosis have loss of weight, so we can get no help there, though it *may be more rapid* in stenosis.

Both have projectile vomiting, though it *may be more intense* in stenosis.

Both have visible waves of gastric peristalsis, though it *may be more marked* in stenosis.

Both show evidence of pain and discomfort when the stomach is full, and relief after vomiting, though it *may be less marked* in stenosis.

Both show gastric dilatation and retention with or without the X-ray, though it *may be more marked* in stenosis.

As I see it then, the diagnosis usually rests on two factors, both of which, I feel, prove pretty conclusively that we are dealing with a case of congenital hypertrophic stenosis of the pylorus.

Congenital, as the constant mass and no normal stools means something blocking the way since birth.

Hypertrophic, because we could not feel the pylorus unless it was hypertrophied, and it is revealed at operation or autopsy.

Stenosis, because no amount of hypertrophy would give rise to no normal stools without a blocking of the pyloric orifice.

Of the pylorus, because there is no other gastro-intestinal structure located to the right, just above the umbilicus, except the pylorus that could be felt and give rise to a blocking of the lower end of the stomach.

I emphatically do not believe in the modern tendency to speak of a mild stenosis or a severe stenosis of the pylorus of congenital origin. I can easily conceive of a variation in degree of a spasm, but for all practical purpose a congenital hypertrophic stenosis is *never mild*. If the pylorus is stenosed by an hypertrophy, it is not a question of degree, but an actual fact.

When writing a paper or listening to one, it seems to be absurdly simple to fit it into our practice, but when we try to do it, it is not so easy as it seems. The question of the normalcy of an infant's stools may not be an easy one and the question of palpating a mass may be very hard. Therefore, I am not advising or intimating that we should not use all medical means at hand to help us to diagnose each and every case and to use all of our knowledge of foods and medicine to keep up the baby's nutrition, but I do plead for a *definite diagnosis*.

It is rather disconcerting to read of physicians who get wonderful results in what is called pyloric stenosis, without operation, but which is never proved to be a true case of congenital stenosis of the pylorus. Simply the fact of curing the case without operation bespeaks to my mind that the correct diagnosis was pyloric spasm.

When we get some reports of medical means, whatever they may be, that cure an infant with the classical symptoms, and the author states that before treatment there were no normal stools and a constant mass was palpated, then we shall drop from our minds and cease to worry about congenital hypertrophic stenosis of the pylorus. Until then, a correct diagnosis means surgical relief, early and skillful, with the prospect of a speedy recovery.

XUM

Report of Case

Baby Whitehead, white male, born July 15, 1930, was seen by me in my office August 8, 1930. There was a history of continued vomiting, projectile in character, loss of weight and constipation. On examination, waves of gastric peristalsis were noted, no mass palpated, and a tentative diagnosis of pyloric spasm was made. Atropine solution, one to one thousand, was given before feeding and a thick cereal recommended.

The baby was about the same on its next visit and, having just read the paper by Dr. E. J. Barnett, recommending the use of phenobarbital, this was given in addition to the atropine and cereal. On the next visit the baby was no better and so it was hospitalized, and given intraperitoneal saline and surgical consultation was held with Dr. J. B. Jones and Dr. H. C. Jones. There was no mass palpated on entrance to the hospital, but the next day there was a questionable mass felt and, although there was some question as to its character, all agreed that there was a small mass near the lower border of the ribs to the right of the umbilicus. Dr. H. C. Jones recommended immediate operation on August 21st, but Dr. J. B. Jones and I, being swayed I believe by the wonderful report as to phenobarbital, and the baby's condition being good, decided to try a little longer to avoid operation. The condition, however, did not improve and it was operated on August 25, 1930.

The laboratory report on August 27, 1930, was as follows: Red cells—1,750,000; Hemoglobin—30; Leucocytes—28,400; Coagulation Time—4½ Min.; Bleeding Time—5½ Min.

An interesting corollary of the case is just what effect the phenobarbital had on the blood picture, and the constant oozing after operation. This infant, six weeks old, had eight grains of phenobarbital in seven days, in doses of one-quarter grain every four hours; this is equivalent to ninety-six grains to an infant twelve months old or about twelve hundred grains to an adult in seven days, or one hundred and seventy-five grains a day.

The baby apparently showed no toxic effects, as fever, eruption, mental or kidney degeneration, though four and a half grains a day to an adult has been known to give such a toxic effect. I could find no mention of the effect of phenobarbital on the blood.

Discussion

Dr. J. Bolling Jones, Petersburg: Baby W.—Case No. 43-1577—entered hospital with cardinal symptoms and physical signs of congenital pyloric stenosis. This opinion concurred in by Drs. McIlwaine, H. C. Jones and myself.

Under Dr. McIlwaine's guidance the most recent medical treatment advocated was tried for a week, without changing the clinical and physical picture. Although there was no apparent loss in weight, and there were small bowel movements occasionally, it was deemed best to operate.

Operation: Rammstedt, August 25. Ether anesthesia.

Procedure: Inner edge, upper right rectus incision. The pylorus was found and consisted of a hard indurated lump bound close to right post-abdominal wall. It was released with considerable difficulty sufficiently to be brought conveniently into view. Rammstedt operation done in usual way. The mucous membrane bulged into the dissected muscle; in lower end, in duodenal surface a small nick was made in mucous membrane, which was readily closed with purse string suture of linen. There was no bleeding that seemed to require ligature. On account of the nick in duodenum, a very small rubber dam cigarette drain was inserted—to be removed in twenty-four hours. Abdomen closed in layers. Post-operative condition was excellent.

A few hours later, in my absence, considerable hemorrhage occurred. Drs. McIlwaine and H. C. Jones felt that the wound and operative field should be explored. This was kindly done by Dr. H. C. Jones. under novocaine anesthesia. The drain was removed, and the wound in abdomen reopened. There was marked oozing at various points in abdominal wall. Operative field seemed clean and free from hemorrhage. Little or no blood was seen in cavity. After securing the main small oozing points in abdominal wall by ligatures, it was again closed in layers, without drainage. Post-operative condition was fair.

The next day, August 26, the child was quite pale but otherwise in good condition, and, particularly because of the last operative findings, this was thought to be due probably to hemorrhage that had occurred before the abdomen was opened the second time.

Blood from the mother was injected into the soft tissues of the buttocks, and later given in the external jugular, and later into the anterior fontanelle. In giving it in the external jugular, it was necessary to cut down on the vessel. It was difficult here to control the oozing from the skin, although the clotting time of the baby's blood was reported as practically normal.

Death occurred on August 28—three days after operation—with the typical picture of hemorrhage.

Autopsy on baby Whitehead, August 28, 1930, showed:

Only abdomen explored. On opening cavity, small amount of fluid blood noted between coils of intestines.

Appearance of intestines and stomach normal. No intestinal contents and no evidence of peritonitis. Incision in pylorus sealed over with plastic lymph. No blood clots adherent to it or near it. Behind and below the pylorus and behind the mesentery of the ascending colon was a large amount of blood, particularly infiltrating the tissues of the mesocolon.

There was small clot in the pelvis. The entire posterior peritoneum along the spine was much dis-

XUM

colored. The adhesions that we separated at time of operation were at the upper end of this area.

The entire stomach, pylorus and two inches of the duodenum were removed. After removal, the opening in pylorus was found well open both from above downward and from below upward. Nothing was escaping through the duodenum where it was nicked at time of operation.

Beginning about the middle of the transverse colon and extending to the rectum, the large bowel was, in our judgment, markedly contracted. This section was removed.

Conclusion: (1) Fatal secondary hemorrhage, occurring from congenital adhesions, which were broken up in bringing forward the pylorus at the time of operation. (2) Partial stenosis of distal half transverse colon and entire descending colon.

DR. J. SHELTON HORSLEY, Richmond: I was very much interested in the paper and also in the report of Dr. Jones. It is a rather unusual case. It is by following out these things, such as Dr. Jones' reports, that we shall really know something.

Dr. Leonard Freeman, of Denver, in discussing congenital pyloric stenosis before the American Surgical Association, brought out a theory of its etiology which I had never heard before. He thinks it is an evolutionary flareback. For instance, chickens and fowls have a craw and gizzard. The gizzard is a grinding mass of unstriated muscle. He thinks this congenital pyloric stenosis is a flareback, an attempt to imitate the gizzard. He has some very good authority on his side. Dr. McIlwaine has some very interesting theories. Divine, of Australia, thinks it is due to some sympathetic disarrangement similar to that from which we get Hirschsprung's disease.

From the operative standpoint, the operation is comparatively simple if done without too much trauma. I think it is a good suggestion Dr. Stuart McGuire made, several years ago, about using as an anesthetic, a sugar rag and local anesthesia. The liver should be pulled up and the stomach left distended with gas. In that way there is protection from eventration of the small intestines, which sometimes results from sudden strain.

DR. C. E. CONRAD, Harrisonburg: Just one thing of interest relative to the question of the action of phenobarbital, on the nervous element in pyloric stenosis. Three months ago I had a case that was operated on the fourth day after birth. The patient showed definite tumor and projectile vomiting on her third day. The operation did not relieve the vomiting; the fibers were well separated, but the baby continued to vomit. It was placed on atropin and given fluid to hold it up, without any result on the vomiting. At the end of seven weeks it was put on one-eighth of a grain of phenobarbital every four hours. It ceased vomiting and has had no trouble since. Two weeks after starting on the phenobarbital it gained fourteen ounces and has been gaining ever since. I think two things play a part in congenital stenosis, the definite stenosis and the nervous system, and that is why we get results sometimes in one way and sometimes in another.

DR. J. B. STONE, Richmond: Dr. McIlwaine has given us a very interesting review of the different ideas that prevail on hypertrophic pyloric stenosis in infants. The fact that opinions have changed so much indicates that even at the present time we are in the dark as regards the etiology of this condition. The only theory that gives any hope of treating it in a preventive way is that of a vitamin B deficiency.

If you consider that an abundance of vitamin B in the mother's diet is important for her own general health and also for the health of her baby, it seems unnecessary to emphasize it as a special preventive for hypertrophic pyloric stenosis. The expectant mother should have a liberal amount of green vegetables in her diet, regardless of any possible effect in preventing pyloric stenosis in the infant.

As regards the question of stenosis or spasm, it has been said that if a child can be kept alive for six or eight months, it will recover spontaneously from hypertrophic stenosis, as well as pylorospasm. In my opinion it is doubtful whether a case of organic hypertrophic pyloric stenosis of marked degree can be kept alive on medical treatment for that length of time. Those that survive are probably severe cases of pylorospasm. From a practical standpoint, there are two things that we want to consider in these cases: first, the matter of making the diagnosis; second, what are we going to do after making the diagnosis? When it comes to making a diagnosis, I do not think we should hold off because of not being able to feel a mass. Personally, I do not think I have ever been able to feel a mass. Even in cases that come to autopsy we find masses we have never been able to palpate. When there is continued vomiting, constipation, and continued loss of weight without other explanation being evident, I think we are justified in making a tentative diagnosis of pyloric stenosis. If we get a child of that type (assuming that there have been no dietary errors), and put it on atropine for two weeks and thick cereal feedings along with other appropriate medical measures without improvement, I don't think we are justified in waiting any longer, but should operate. If we wait too long the child gets in such a feeble condition that it cannot stand the operation. Medical treatment in these cases is long drawn out and the child stands a good chance of acquiring some intercurrent infection with a fatal outcome. Make the diagnosis, then try medical treatment for a week or ten days; but resort to surgery early if there is no improvement on medical treatment.

DR. MCILWAINE, closing the discussion: I was hoping there would be a chemist in the audience, or a professor of pharmacology in one of the universities, who would discuss the effect of phenobarbital on the blood. It is interesting that an infant a few months old could stand a dose of phenobarbital comparatively as if you or I took a dose of 175 grains a day for seven days. I am still uncertain whether the Pheno Barbital caused the constant oozing or not.

FAMILIAL DYSTROPHY OF NAILS AND HAIR WITH REPORT OF THREE CASES.*

By KINLOCH NELSON, M. D., Richmond, Va.
McGuire Clinic, St. Luke's Hospital.

From time to time there have occurred in the literature reports of peculiar changes in the nails and hair apparently of a familial nature. Opportunity has presented itself for the observation of three such cases, two sisters and a brother over a period of several years. Also

*Read at the sixty-first annual meeting of the Medical Society of Virginia, held in Norfolk, Va., October 21-23, 1930.

one unaffected brother has been studied for other reasons, and in fact none came because of the anomaly herein discussed.

Report of Cases

Case I.

History: A. K., 53 years old, single, white, female, dressmaker, came to McGuire Clinic, September 17, 1927, complaining of vague abdominal pains which had troubled her for some time.

Family History: See below.

Menstrual: Periods began at 14. At first an occasional one was missed, later they came more frequently, usually every third week with scanty flow, for 3 or 4 days.

Menopause at 44, no trouble since.

Past History: Insignificant except that hair and nails had always been as below and she was subject to a vague general attack of sickness and nervousness in 1908 described as a nervous breakdown.

Physical Examination: Positive findings only.

1. Hair over the head limited to a fine yellowish down. No eyebrows or eyelashes. Axillary and pubic hair absent.

2. Kidneys bilaterally palpable.

3. Both finger and toenails showed absence of lunula. They appeared small and bitten off and did not reach the end of the finger. The distal end was slightly elevated from the nail bed which appeared normal. Vertical strictions seemed normal. They required very infrequent cutting and seemed dry and more brittle than usual.

4. Blood pressure 140/90.

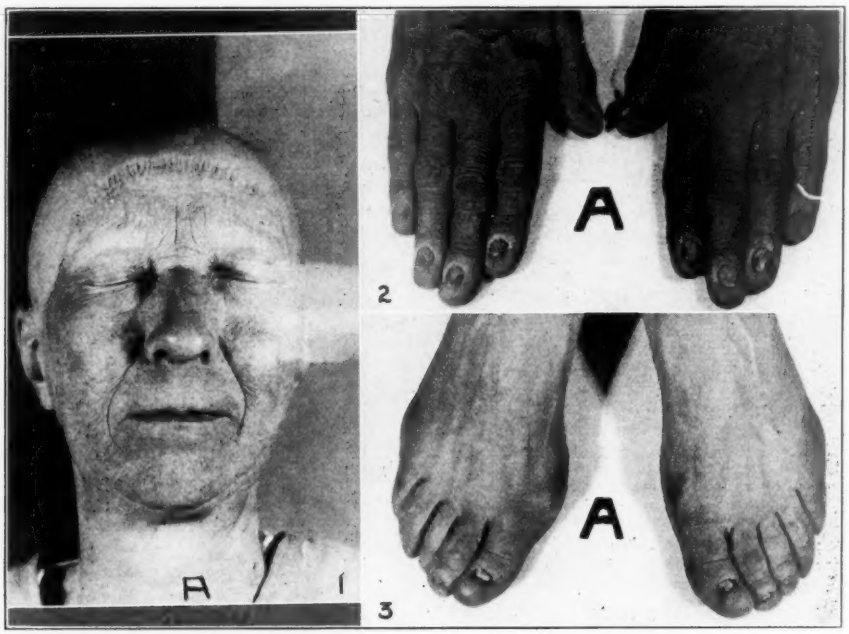
Laboratory Examination:

Blood: Hemoglobin 72 per cent. Leucocytes 4,500. Differential count: Polymorphonuclears 50 per cent; lymphocytes 48 per cent eosinophils 2 per cent.

Wassermann negative.

Urine: Straw, slightly cloudy; specific gravity 1,016; acid; albumen faint trace(?). Sugar, acetone, and microscopic examination negative.

Course and Treatment: Placed on dilute hydrochloric acid and pepsin after meals. Got along very well. Returned in October, 1929, feeling well but troubled by hemorrhoids present for past few months. Given suppositories. At that time basal metabolic rate was minus 6. X-ray of sella turcica normal. Sugar tolerance test was done. (See below). At pres-



Figs. 1, 2 and 3. Case I.

ent time is in good health pursuing usual duties.

CASE II.

HISTORY: C. K., 51 years old, single, white, female, dressmaker, came to McGuire Clinic, June 29, 1928, complaining of pain in right lower abdomen and "indigestion" present for many years. Had recently been troubled by constipation and sensation of "bloating" over upper abdomen.

Family History: See below.

Menstrual: Periods began at about 15 years of age. Always regular. Stopped at 45 years.

Past History: Hair and nails have always been as below. (As a child had had an occasional stiff eyelash which seemed to "grow inwardly" and was pulled out by mother). Sore throat as a young girl. Urticaria at 31 years. Adenofibroma removed from both breasts at 37 years.

PHYSICAL EXAMINATION: Appearance of hair and nails so exactly like that of sister above that no further note need be made. The thyroid was slightly enlarged and hard. Blood pressure 170/96. Tonsils chronically inflamed.

LABORATORY EXAMINATION:

Blood: Hemoglobin 80 per cent. White blood cells 5,300. Differential count: Polymorphonuclears 62 per cent; lymphocytes 33 per cent; eosinophils 5 per cent.

Wassermann negative.

Urine: Slightly cloudy, amber, acid; specific gravity 1,016; albumen faint trace(?); sugar and acetone negative. Microscopically, rare leukocyte and occasional hyaline casts.

Ewald Meal: Free hydrochloric acid 24; combined acid 18; total acid 42; benzidine blood test negative.

COURSE AND TREATMENT: Placed on diet of foods low in acid and given magnesia and soda in small doses after meals. Tonsillectomy in September, 1928. Continued in good health except for occasional gastrointestinal upset. In December, 1928, Ewald meal showed free hydrochloric acid 50, combined acid 20, total 70. Benzidine test for blood negative. Urine normal. Patient returned in February, 1929. Right ovarian cyst removed. Got along very well. Returned for check-up in October, 1929. Basal metabolic rate minus 12. X-ray of sella turcica normal. Sugar tolerance test done. (See below.) For past year in good health pursuing usual duties.

CASE III.

HISTORY: T. P. K., 42 years old, single, white, male bookkeeper, came to McGuire Clinic, July 22, 1925, complaining of weakness, nervousness, and loss of weight. All present for about two years. Recently had had considerable abdominal pain and fullness.

Fig. 4.—Photograph of Case II as a child.

Family History: See below.

Past History: Usual childhood diseases; typhoid fever at 20 years; influenza at 40 years. Neisserian infection at 32 years. Epididymotomy the same year. Hair always scanty and nails as described below since birth. All his life has been cold and "seems more so as he grows older."

PHYSICAL EXAMINATION: 1. Thin, short, fine yellowish to brownish hair over head. (Patient states that he formerly had more than at present.) Sparse axillary, chest, and pubic hair of same type. Eyebrows consist of small amount of similar hair. Eyelashes are limited to a few bristles. Beard pale yellowish requiring shaving about every three days.

XUM

2. Right kidney palpable and freely movable.

3. The nails are identical with those of sisters described above.

4. Error in refraction, having worn eyeglasses from time to time for many years.

5. Blood pressure 110/80.

Laboratory Examination:

Blood: Hemoglobin 70. White blood count 6,600. Differential count: Polymorphonuclears 72. Lymphocytes 28. Wassermann negative.

Urine: Light amber, cloudy, alkaline. Specific gravity 1,022. Albumen very faint trace (?). Sugar and acetone 0. Microscopic examination: Occasional pus cell. No blood or casts.

Ewald Meal: Free hydrochloric acid 38; Combined acid 24; Total 62. Occult blood very faint trace. Microscopic examination negative.

Basal metabolic rate minus 19.

X-ray examination: Exaggerated gastroptosis and ptosis of transverse colon. There is no other evidence of organic deformity or obstructive lesion in the gastro-intestinal tract.

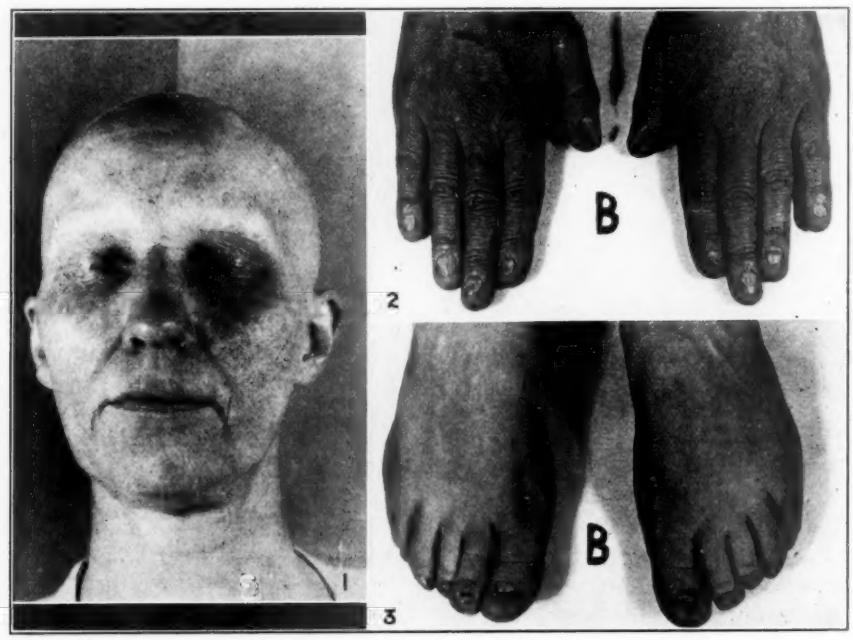
Course and Treatment: Placed on thyroid extract gr. 5, daily. Also compound resorcin tablets 3, t. i. d., p. c. Given abdominal support. Considerable improvement. Basal metabolic rate plus 10, after several weeks. No change noted in hair or nails.

June 22, 1928. Observations had been continued from time to time since above. General condition essentially good with periods of digestive upset occasionally. At time of a severe upper respiratory infection, sputum was negative for tubercle bacilli.

At present time in good health pursuing usual duties.

Case IV.

History: Rev. M. F. K., 40 years old, married, white, Lutheran minister, came to McGuire Clinic, October 4, 1928, complaining of dull pain in region of umbilicus, constipation, pain in back of neck, headache, all present at times for many years. Also troubled by migrainous headaches prone to occur unless bowels move daily.



Figs. 5, 6 and 7. Case II.

Family History: See below.

Marital History: Married thirteen years. Four children living and well. One child has *spina bifida.* Otherwise negative.

Past History: Usual childhood diseases, un-

complicated. Severe case of "peritonitis" at age of 16. *Abdominal paracentesis* done several times. Tonsillectomy at age of 38.

PHYSICAL EXAMINATION: Essentially negative. Blood pressure 110/80. Hair and nails normal.

LABORATORY EXAMINATION:

Blood: Hemoglobin 80. White blood cells 6,000. Differential blood count: Polymorphonuclears 71 per cent; lymphocytes 25 per cent; eosinophils 4 per cent.

Wassermann negative.

Blood sugar 155. Non-protein nitrogen 34.

Urine: Amber, clear, specific gravity 1,009, acid, albumen very faint trace (?), sugar and acetone negative. Microscopically, occasional leukocyte, no blood or casts.

Ewald Meal: Free hydrochloric acid 40; combined acid 32; total acid 72. Benzidine test negative.

Renal Function: 61 per cent of dye excreted in two hours.

Feces: No parasites or ova. Occult blood negative.

ELECTROCARDIOGRAM: Sinus bradycardia, rate 60. Otherwise normal.

COURSE AND TREATMENT: Placed on diet low in acid, given belladonna and bromide before meals, with magnesia and soda after meals. General health now o. k.

DISCUSSION OF CASES

All four were of under-nourished, underdeveloped appearance. All were mentally sound. None showed any particular skin disturbance. The family history as to disturbance of nails and hair is seen from the chart. The father of the four patients observed had abundant apparently normal hair until at college it came out and did not return. His nails were deformed (see photograph, Figure 9). Grandfather and great grandfather had normal hair but abnormal nails. One sister of patients observed has some nervous disease diagnosed multiple sclerosis.

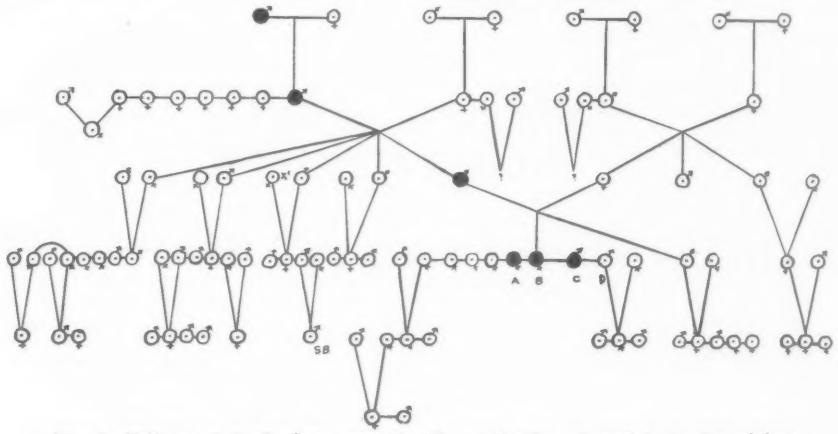


Fig. 8.—Pedigree of family here reported. The explanation of symbols is given below

Symbols.
♂ Normal Male
♀ " Female
♂ Affected Male
♀ " Female
A B C D Four Cases Studied
SB Still-Birth
? or X - No Information

GENERAL CONSIDERATION OF THIS DISTURBANCE

In considering the cause of any pathological process various groups of factors present themselves:

1. The influence of heredity, race, nationality, sex, age, environment (climate, occupation, etc.).

That this disturbance has an hereditary basis is immediately apparent upon perusal of the literature. Families similarly affected have been described by Nicolle and Halipré,[1] White,[2] Eisenstaedt,[3] Barrett,[4*] Tobias,[6] Jacobsen,[7] Mayer,[8] Thompson,[9] and Hoffmann.[13†]

*Chart not reproduced.
†Only a summary available.

(See charts.) Families suffering from a slightly different peculiarity of the nails accompanied by various abnormalities of hair, teeth, or other organs have been described by Fox[10], Wilson,[11] and Murray[12]. (See charts.) Families suffering from similar disturbances of the hair with normal nails have been described by Jeanselme and Rimé,[5] and Bazant and Gawalowski.[14]‡

From these charts it may be seen that the vast majority of affected persons whether men or women inherit the condition from an affected father or mother, sex apparently playing no part. In other words normal parents may expect normal children. To these statements there exist two possible exceptions: the cases of White,[2] where one whole generation was unaffected with recurrence in the next and succeeding generations; and those of Thompson[9] where the condition recurred in one instance where the parents and grandparents had been unaffected. The former author states: "All these data were gleaned after much ques-

‡Quoted by Jacobsen.[7] The original article not available.

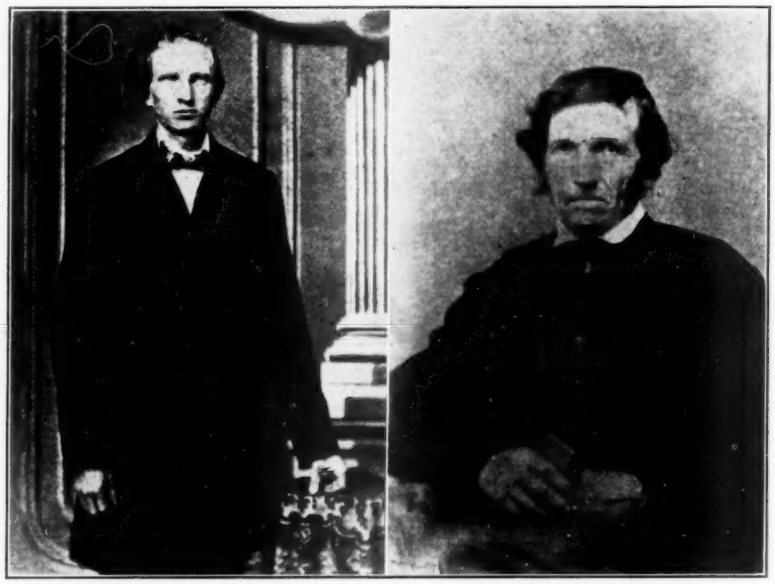


Fig. 9.—Photograph of the father of the patients studied, showing abnormal nails and normal hair which afterward came out and did not return. (Note hypertrophic appearance of right thumb nail.)
Fig. 10.—Photograph of the grandfather of the patients studied, normal hair and abnormal nails.

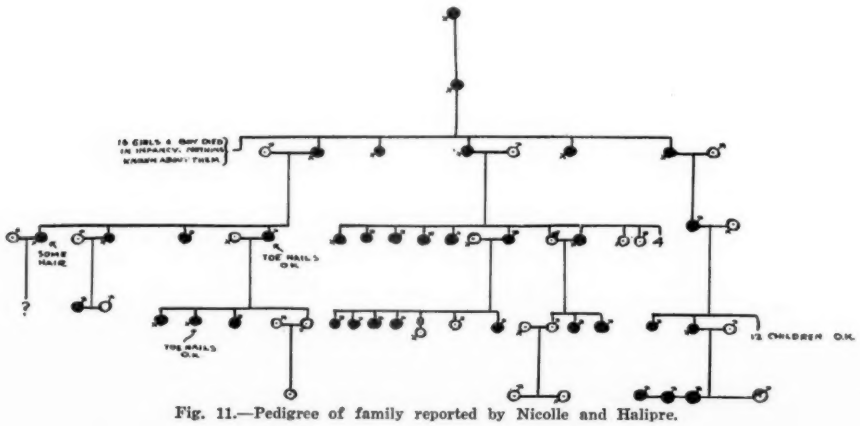


Fig. 11.—Pedigree of family reported by Nicolle and Halipre.

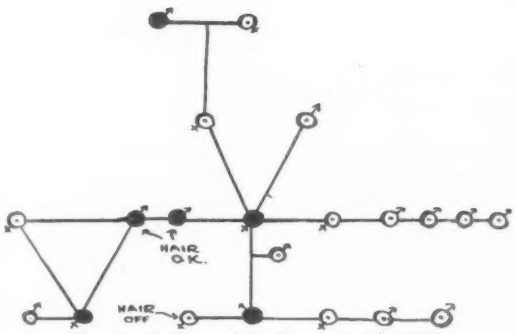


Fig. 12.—Pedigree of family reported by White.

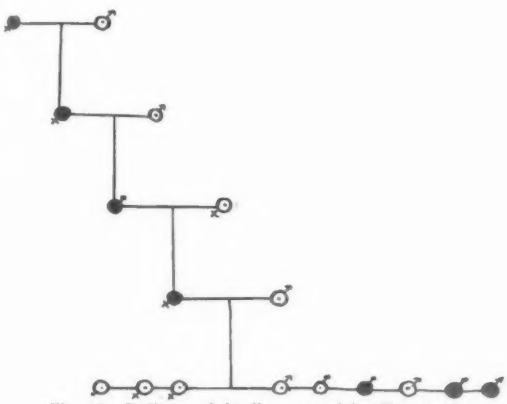


Fig. 13.—Pedigree of family reported by Eisenstaedt.

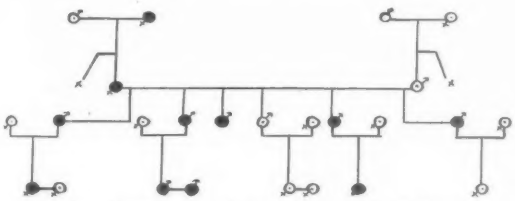


Fig. 14.—Pedigree of family reported by Tobias.

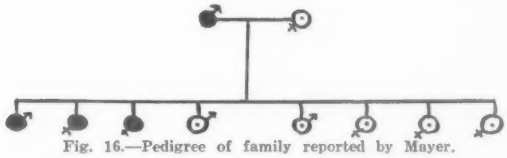


Fig. 16.—Pedigree of family reported by Mayer.

tioning, and I cannot vouch for their accuracy." With these possible exceptions the abnormality acts as a "Mendelian dominant unsex-linked."[7]

It is also seen that the majority of affected individuals have more normal than abnormal children. Again, many of the abnormal persons die without issue whether from social unattractiveness because of their deformity, or from lack of normal sexuality, or from some unknown cause. This is especially well illustrated by the family observed, in which the three affected members living are single.

Nationality and race would seem to have an important bearing here. All reported cases are in white persons. Whenever the origin of the affected family is mentioned (1, 2, 3, 4, 5, 7, 8) it is seen to be French, French Canadian, or Franco-German. No information is available as to the nationality of the other cases (6, 9, 10, 11, 12, 13, 14). The family herein presented originally emigrated from Alsace, now a province of France.

Age, climate, occupation, etc., do not seem involved in this dystrophy except that in practically all cases the abnormality is congenital. In Fox's case[10] the trouble was first noted at the age of four, in White's[2] at the age of nine.

2. The influence of foreign agents, such as chemicals, physical forces, bacteria, fungi, etc.

Neither in the reported cases nor in those observed did any chemical or physical agent seem to play a causative rôle. Several authors

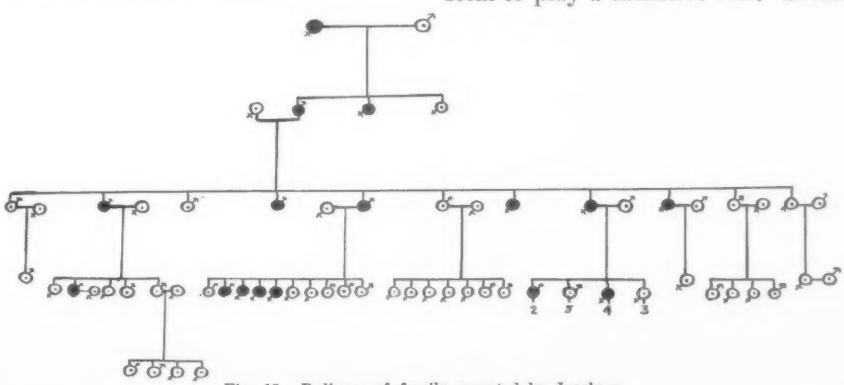


Fig. 15.—Pedigree of family reported by Jacobsen.

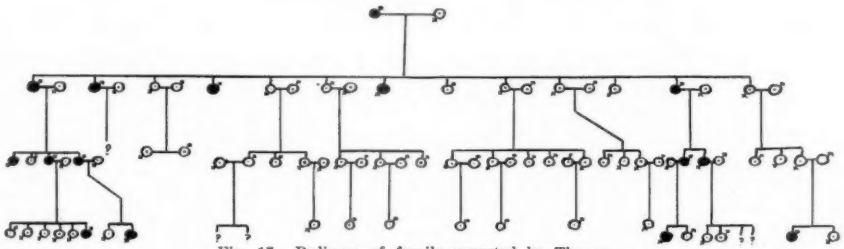


Fig. 17.—Pedigree of family reported by Thompson.

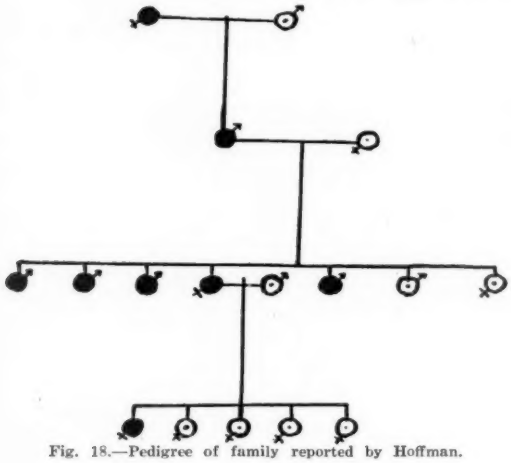


Fig. 18.—Pedigree of family reported by Hoffman.

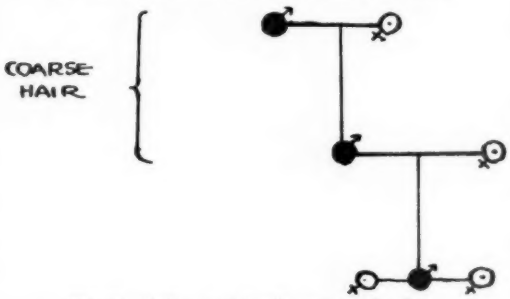


Fig. 19.—Pedigree of family reported by Fox.

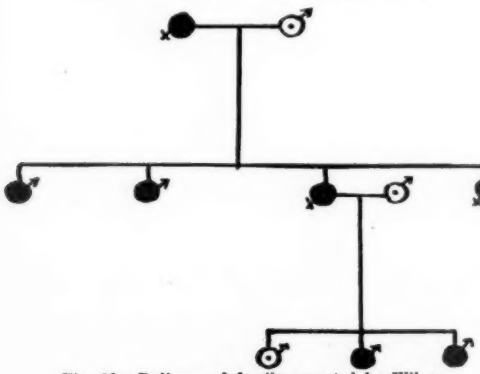


Fig. 20.—Pedigree of family reported by Wilson.

attempted the cultivation of bacteria or fungi from the affected hair or nails. White[2] was unable to find either by examination, direct staining, or culture any parasites in the hair. From the nails he cultivated staphylococcus pyogenes albus and streptococcus pyogenes albus.* Wilson[11] found no spores on the nails. Tobias,[6] Jacobsen,[7] and Eisenstaedt[3] found no evidence of mycotic infection. Our cases were not so studied.

3. The influence of disease in other organs whereby the pathology under consideration becomes an evidence of some more basic disturbance instead of being the actual primary trouble.

All reports have excluded congenital syphilis, nor has any skin disease such as icthyosis, psoriasis, etc., seemed to play a causative part.

Efforts have been made to link the disturbance with some dysfunction of the internal glands, especially the thyroid. Nicolle and Halipré[1] were unable to palpate the thyroid in their case. They state that it is either absent or atrophied. In Hoffmann's[13] family many members had had enlarged thyroids. The patient studied by him showed an enlarged thyroid, other findings making him suspect a slight hyperthyroidism. The patient was 27 years old at the time. No metabolism reading was stated. Two patients of the family observed by Barrett[4] showed an apparent myxedema. Another, aged 27 years, suggested hypothyroidism. No metabolism recorded. This patient improved in general condition and also as to nails and hair following thyroid administration, returning to previous condition when this was stopped. He concluded: "The well-known association of abnormalities of hair and nails in hypothyroidism and the two fairly well-defined cases of juvenile myxedema, and the reaction of one case to thyroid

*Several of the nails in his patients were infected. Whether cultures were taken from these or from the uninfected ones is not stated.

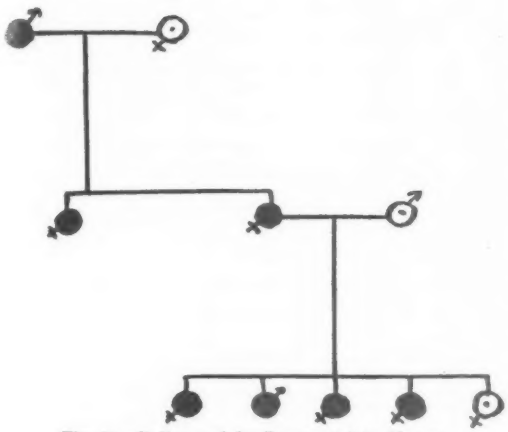


Fig. 21.—Pedigree of family reported by Murray.

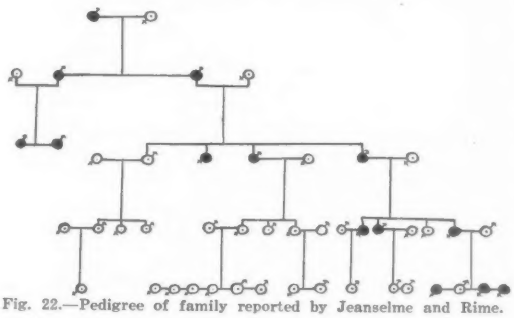


Fig. 22.—Pedigree of family reported by Jeanselme and Rime.

feeding, seems to warrant the conclusion that the fundamental disorder in this family was of the thyroid gland." Jeanselme and Rimé[5] noted no gross evidence of thyroid or ovarian deficiency. Jacobsen[7] found a somewhat elevated metabolic reading in one of his cases. He considered this of doubtful value. Mayer's[8] case, aged 20 years, suggested no particular hyper- or hypo-thyroidism. He records the thyroid as small, the metabolism as minus 9. In the author's cases there was no clinical impression of thyroid dysfunction. In two cases the metabolic readings were minus 6 and minus 12. No thyroid medication was given. In Case III the metabolism was minus 19. Thyroid extract gave general improvement but produced no appreciable change in hair and nails.

Later observers have investigated as far as possible the condition of other internal glands. The cases of Barrett,[4] Mayer[8] and the author have shown normal sellae turcicae. Barrett[4] also states: "This patient was tested for glucose tolerance and it was found that he could take 250 gm. of glucose in twenty-four hours before sugar appeared in the urine." Exactly what this signifies is not clear but apparently it is taken to indicate that the patient's ability to tolerate sugar was elevated or that his "renal threshold" for sugar was elevated. The so-called sugar tolerance test was carried out on two of our patients as follows: 1.75 gm. of glucose per kilo of body weight were administered by mouth. Blood sugar determination was made prior to this, one-half an hour and two hours afterward. The urine was examined for sugar at intervals during the test. In Case I, the fasting blood sugar was 110. One-half an hour after glucose administration it was 165, and two hours after it was 145. In Case II, fasting blood sugar was 110; one-half an hour after glucose it was 210, and two hours after it was 200. No sugar was spilled into the urine during either test. These observations would indicate a poor tolerance and an elevated renal threshold. Such changes are most frequently seen in persons frankly diabetic or potentially so. No other facts lead to such a suspicion here. Cases said to have hyperpituitarism, as well as other disturbances, may show curves similar to these. Certainly, however, no one would make any definite diagnosis on this basis alone.

In the investigation of the other internal glands, such as the pancreas, ovary, testicle, etc., either observations have been negative or no methods for testing their function have been devised up to this time.

II. Pathology

This may be roughly divided into several groups, as follows:

Group I. Cases showing nails of hypertrophic appearance, especially at the ends, and the hair either normal or involved (10, 11, 12).

Group II. Cases showing nails of somewhat atrophic appearance, and the hair most frequently abnormal (1, 2, 3).

Group III. Cases with involvement of the hair, and normal nails (5, 14).

Of the reported cases many combinations of the above types occur in the same family groups. Some have hypertrophic nails with coarse abundant hair; others atrophic nails of fingers with nails of toes normal and hair abnormal; others somewhat hypertrophic nails and abnormal hair; etc. No reported or ob-

served case has shown involvement of toe nails alone, or involvement of toe nails and hair.

1. Nails.

A. Gross Pathology

Group I. The base of the nail has a smooth surface with normal appearance. As the distal end is approached there appears marked hypertrophy, apparently of nail-bed, resulting in a yellowish, blackish, or brownish mass between the nail and finger. The end of the nail may project upward and be curled with a claw-like appearance.

Group II. The base of the nail may be normal or the lunula may be absent. The nail appears smaller than normal and frequently the end of the finger or toe has a rounded bulbous appearance. The nails are usually attached to the bed throughout their extent, but in some cases the distal end of the nail projects slightly. The nail itself seems dryer and more brittle than normal. They appear as if constantly bitten.

Many cases show nails having some characteristics of each group.

Group III. Nails normal. Hair abnormal.

B. Microscopic Pathology

No examinations of nail sections have been made. X-ray of the fingers in one case[8] revealed no disturbance.

2. Hair.

A. Gross Pathology

Except in one instance,[10] all deviations from normal in the hair have been as follows: Normal distribution of hair is usually absent especially in women, that on the head being short, soft, pale yellowish, or yellowish brown, and pointed on the end. It is easily pulled out without any particular discomfort on the part of the patient. Some cases have shown hair as much as 30 cm. long. Eyebrows and eyelashes are usually absent or are limited to a few short bristles. The beard of the men is very frequently absent or sparse, individual hairs being similar to those on the head. Axillary and pubic hair is either absent or sparse, and may be of feminine type in the men. The chest or other portions of the body may show the fine down above described.

B. Microscopic Pathology

Under the microscope these hairs appear normal. There are no air bubbles, rings, nodes, or splits (5, 2).

Associated with the disturbance of the hair and nails or both, there have been recorded various other disorders such as hyperkeratosis of the skin, cutis marmorata, mental disturbances such as hysteria, idiocy, criminal delinquency, speech defects, and abnormalities of the eyes. As has been remarked by others, it seems noteworthy that all structures usually, or occasionally, clearly involved arise from the ectoderm.

III. Clinical Picture and Diagnosis

The history, physical findings, other examinations, and diagnosis are exemplified by the above discussion.

IV. Treatment

This has been universally poor in results. The shaving down of the hyperkeratotic mass plus the use of some ointment such as that of salicylic acid have given some temporary relief but afforded no benefit to the condition itself. The administration of thyroid extract has apparently proven beneficial in one case,[4] and has been recommended by Jacobsen.[7] In our Case III, thyroid extract, though elevating the basal metabolic rate, produced no change in the nails or hair. In Thompson's case,[9] X-ray treatments showed some temporarily beneficial results. Apparently, no efforts have been made to produce a better growth of hair except in Barrett's case[4] where thyroid extract seemed to have been helpful.

V. Prognosis and Course

Many authors have recorded the liability of these nails to infection, especially following slight trauma. Such infections give off a peculiarly offensive odor.[1, 2] When infection is once present it is gotten rid of with great difficulty and tends to return from time to time. It has also been noted that these nails come off easily, which occurrence is followed by the slow growth of a new one similar to the original. In no recorded case have normal nails replaced those originally abnormal.

Summary and Conclusions

1. Familial dystrophy of the hair and nails is an hereditary disturbance directly transmitted from parent to child, occurring primarily in persons of French origin. *Unaffected individuals seldom if ever transmit the abnormality to their descendants.* It is characterized by changes, usually congenital, in the nails of hands and feet, a peculiar type of hair,

and at times by various other disturbances, especially in structures derived from the ectoderm. There is a possibility that some internal gland dysfunction, notably that of the thyroid, may be associated with this disease. Persons so affected may have involvement of the finger nails alone; finger nails and toe nails; hair alone; finger nails and hair; or finger nails, toe nails and hair. No case has been noted of the involvement of the toe nails alone, or toe nails and hair. No treatment has proven of any particular benefit. Such nails are very liable to sluggish recurrent infections.

2. Three cases with their family history have been added to the literature on this subject.

BIBLIOGRAPHY

1. Nicolle, G., and Halipré, A.: Haladie familiale characterisée par des altérations des cheveux et des ongles, *Ann. de dermat. et syph.*, 6:675 and 804, 1895.
2. White, C. J.: Dystrophia Unguium et Pilorum Hereditaria, *J. Cutan. & Gen. Urin. Dis.*, 14:220 (June), 1896.
3. Eisenstaedt, J. S.: Three Cases of Familial Dystrophies of Hair and Nails, *J. A. M. A.*, 60:27 (January 4), 1913.
4. Barrett, A. M.: Hereditary Occurrence of Hypothyroidism with Dystrophies of the Nails and Hair, *Arch. Neurol. & Psychiat.*, 2:628 (December), 1919.
5. Jeanselme and Rimé: Un cas d'alopécie congénitale familiale, *Bull. Soc. franc. de dermat. et syph.*, 31:79-82, 1924.
6. Tobias, Norman: Hereditary Familial Dystrophy of Nails, *J. A. M. A.*, 84:1568 (May 23), 1925.
7. Jacobsen, A. W.: Hereditary Dystrophy of the Hair and Nails, *J. A. M. A.*, 90:686 (March 3), 1928.
8. Mayer, W. D.: Congenital Dystrophy of the Hair and Nails, *J. Mich. S. Med. Soc.*, 27:712, (November), 1928.
9. Thompson, T. C.: Hereditary Dystrophy of the Nails, *J. A. M. A.*, 91; 1547 (November 17), 1928.
10. Fox, T. C.: Symmetrical Hyperkeratosis of the Nail-beds of Hands and Feet and of Other Areas, Chiefly in the Palms and Soles, *Clin. Soc. Trans.*, 30:242 (April 23), 1897.
11. Wilson, A. G.: Three Cases of Hereditary Hyperkeratosis of the Nail-Bed, *Brit. J. of Dermat.* 17:13 (January), 1905.
12. Murray, F. A.: Congenital Anomalies of the Nails. Four Cases of Hereditary Hypertrophy of the Nail-Bed Associated with a History of Erupted Teeth at Birth, *Brit. J. of Dermat*, 33:409, 1921.
13. Hoffman, R.: Uber Verkummerung der Augenbrauen und der Nagel bei Thyreoidosen, *Archiv. fur Dermatology and Syphilis*, Wien, 89:381-384, 1908.
14. Bazant and Gawalowski: Hypotrichosis Universalis Congenita, *Ceska Dermatologie* 1: No. 7, 1920.
15. Pires de Lima, J. A.: Onychatrophie familiale congénital, *Ann. de dermat. et syph.*, 6:266-271, 1924. Quoted by Jacobsen. Reference not available.

AN UNAPPRECIATED SOURCE OF EPIGASTRIC DISTRESS.*

By JAMES W. HUNTER, JR., M. A., M. D., F. A. C. P.
Norfolk, Va.

It is with some hesitation and a misgiving amounting almost to fear that I shall ask your consideration of an unappreciated source of epigastric distress, for I fully appreciate the utter folly of attempting to present a communication entirely new upon any one of the various rôles of the gastro-intestinal tract. Yet the ailment, to which I refer, is a common one. What I shall say is based entirely upon my own observation and my own experience and more particularly upon the last one thousand examinations that I have made of the stomach and intestines. To those gentlemen, who have so kindly taken me into their confidence during so many years and who have kept (and are keeping) me supplied with an abundance of material, I tender my most profound appreciation.

As a boy (and especially as a student of Professor Gildersleeve's excellent Latin primer) I was kept well informed of the fable or parable of the belly and the members. Once upon a time, so the story goes, the various members of the body, observing that the belly did no work but apparently lived a life most idle and luxurious, determined to revolt. Accordingly, the hands refused to convey the food to the mouth, the mouth to receive it, the teeth to chew it and the gullet to swallow it. They soon learned, however, to their sorrow, that they became weaker and that it is only by the harmonious functioning of the digestive organs that we live and thrive.

As a college student I found that a belated breakfast, a hearty dinner and a supper usually consisting of hot bread, hot meat and griddle cakes, unless accompanied by a reasonable amount of exercise in the open air, were not compatible with an optimum condition of the brain for the acquirement of knowledge or "cramming" for tedious and strenuous examinations. As a medical student it was freely impressed upon me that the stomach was the seat of many of the common ills of mankind. Gastritis, hyperacidity, hypoacidity, ulcer, carcinoma, all of these were freely discussed, but of the duodenum, ileum and colon, these latter were only occasionally mentioned and then only in connection with certain ulcers of

*Read at the meeting of the Norfolk County Medical Society, February 16, 1931.

XUM

the small intestine and amoebic and other dysenteries.

When I began to practice medicine, to the appendix was ascribed most of the ills to which the stomach and intestines are heir. The pathology of the blind gut had been established and a suitable operative procedure developed. To quote the opinion of a friend, our venerable State medical society literally became a surgical debating club, the principal topic being when to operate and when not to operate in appendicitis. Obsessed with the idea that the gastric ills were more than common and of serious possibilities, I sought long and earnestly for what I could not find. My own conversion has, therefore, come somewhat like that of St. Paul, a long series of preparation, a succession of hard knocks and a dramatic dénouement. It is only lately that we have begun to see clearly and I think that all of us would gladly vote to delete from the works upon the principles and practice of medicine much that is said upon the subject of gastro-enterology and to consign some of the special works and papers upon that subject either to the flames or to the sea.

In any well conducted examination or study of any of our organs a well taken history is most essential. It tells us in no uncertain terms why the patient has consulted us. Yet this craze for history taking has its pitfalls. Some years ago, for instance, a distinguished internist, of Boston, made the statement that he could diagnose carcinoma of the stomach from the history and a physical examination long before the instruments of precision would reveal anything. And this state of mind still persists. To give just one example: Some years ago I was consulted in regard to a gentleman complaining of an abdominal pain. I diagnosed a pathological gall-bladder. The referring physician, however, thought well to have another consultant. A diagnosis was made of ulcer of the stomach. The patient entered one of our hospitals, was placed upon the diet of Lenhartz, improved and in due season was discharged. The original pain recurred. This time he consulted a surgeon. I was again asked to make an examination and, as before, reported my conviction that a pathological gall-bladder existed. A cholecystectomy was, accordingly, performed and the patient made an uneventful recovery. A little later I desired to report the case. An examination of the hospital record gave a most beautiful history tending to establish a diagnosis of gastric ulcer. The second history was indicative of a pathological gall-bladder. In other words, given a patient suffering from a digestive distress, we can by proper methods of questioning obtain any history that we desire.

This, however, is through no fault of the examiner. We have long since found that case histories are in many instances like the answers of the ancient oracles; they can be interpreted in more ways than one. If we will accept the law of the inverse arc, so much commented upon by Mackenzie in his work upon the diseases of the heart, that any pathology occurring along the course of a nerve will have its pain referred to the terminal distribution of that nerve, as true, the problem will become clearer. The vagus or pneumogastric nerve supplies branches to the stomach directly and to the other intestines indirectly through the solar and mesenteric plexuses; its terminal fibres are in the pyloric end of the stomach. Then, too, the stomach, duodenum, gall-bladder and ascending colon occupy an almost common area. So that an injury to, or pathology of, any of these organs is likely to be referred to what is believed to be the area of the stomach, or more properly to its pyloric end.

We learn by our failures. Of the personal application of the law of the inverse arc I have lately had a very instructive example. Several months ago I was consulted by an old playmate, a charming lady. She complained of pain over her lower left chest. Pleurisy could be definitely ruled out, as could also gastric or gall-bladder disease. The shadow of her heart and arch was apparently normal. Yet the pain continued. An examination of certain teeth was apparently negative. She was seen by many consultants. The possibility of Malta fever was considered. Finally an enlargement of the area of the arch of the aorta was found by another roentgenologist. A diagnosis of spinal cord tumor seemed warranted. A terminal pneumonia then ensued. A postmortem revealed the presence of a malignancy involving all of the nerves of the dorsal region as they emerged from the spinal column, though the spinal cord itself was negative. If, therefore, the law of the inverse arc holds

in the case of the thorax, it is no less true of the abdominal cavity.

From this consideration of the history let us turn our attention to the physical examination of the abdomen. In my own experience (and I think that you will all agree with me) only the grossest pathology of the digestive tract can be discovered. A tumor of the stomach, pancreas, or spleen, an invagination of the bowel, an increase in the size of the liver to palpation or percussion and the location of tender points are perhaps all of the information usually obtainable. Yet this examination is most essential. Occasionally, something unsuspected is brought to light. Lyon in his admirable work on the non-surgical drainage of the biliary tract strongly advises that a diagnosis should be made by physical means, if possible, before resorting to roentgenological methods. He would then either confirm or disprove his tentative diagnosis,—a display of diagnostic ability, perhaps, but in the opinion of most of us a useless expenditure of time and patience.

And so certain other methods have been evolved. We used to be taught that the presence of vomited blood was indicative of some lesion of the stomach, bright blood in the case of an ulcer, "coffee grounds" in the case of a carcinoma. We began to use the stomach tube, to recover gastric contents after a test meal, to test for occult blood, etc. As worked out by certain of the authorities, this method of diagnosis seemed real and convincing. A hyperacidity accompanying occult blood was indicative of ulcer, one of hypoacidity together with occult blood suggestive of carcinoma. But let us hear what Smithies has to say. In an address before our State medical society in 1922, he* says: "The gastric test meal furnishes no pathognomonic information. We must get out of our heads and text-books the idea that increase in gastric acidity means ulcer and that decrease in gastric acidity means that ulcer is healed or absent. There are too many variations in the normal degree and rate of secretion of gastric juice ever to permit the statement that in any individual the finding of high HCl values is due to or indicative of ulcer. Our records show that approximately 30 per cent of proved ulcer cases were associated with what might be termed increase in hydrochloric acid values; that the majority of patients had acid within the so-called normal range, while 25 per cent had no free HCl or the acid secretion was very low; yet with all these variations in acidity, in the great group of patients there was no associated variation in clinical symptomatology or in the rate of ulcer progression or of healing." With this statement of Smithies I feel that most of the better gastro-enterologists are in full accord. Yet no one would discourage the use of the test meal, for any bit of information, however obtained, is of value.

Of the question of occult blood or hemorrhage, it has been my own experience that the great majority of hemorrhages from the gastro-intestinal tract, about which I have been consulted, were due neither to a frank ulcer or to a carcinoma. An inflammatory condition of the oesophagus will often cause it. I have seen cases in which there was frank bleeding, yet my own examinations were negative. In one the recurrence of the bleeding suggested an exploration. Only an exceedingly minute bleeding point was found. A gastro-eterostomy was, accordingly, done, only to have to be undone some weeks later. In another case the surgeon thought best to resect a small ring of the pylorus, but it took the most exacting microscopic examination to determine the bleeding point. In another case repeated transfusions of blood were made upon a case diagnosed as gastric carcinoma. Yet the autopsy showed no bleeding point or carcinoma of the stomach (my own opinion was negative) but a case of splenic anaemia. Similarly, I have found pathological gall-bladders, whose removal relieved the source of bleeding.

My work upon the gastro-intestinal tract with the roentgen rays has probably shown a higher percentage of correct diagnoses than that of the average roentgenologist. I have been particularly struck with the absence of ulcer as a cause of epigastric distress. In a series of perhaps one hundred and seventy-five consecutive cases observed at the Mayo Clinic in 1918 through the courtesy of the late Dr. Carman, only two were suspicious of ulcer of the stomach. At a visit to the Clinic in 1928 as the guest of Dr. Alexander Moore, who at that time was in charge of the department of roentgenology dealing with gastro-enterology, I was impressed with the small number of gastric ulcers presenting themselves. In a discussion with Dr. Moore I was informed that

*American Journal of the Medical Sciences, December, 1923.

XUM

the percentage of gastric ulcers found in the routine examination of the patients was about 1 or 1½ per cent, that the number of gastric carcinomas was somewhat larger, and ulcers of the duodenum approximated 5 per cent. I freely confess that I have had my proportion of failures, of ulcers of the duodenum presenting a normal "cap" upon the roentgen plate, etc. But it must be said that an occasional failure presents no grounds for adverse criticism and that the roentgen examination of the gastro-intestinal tract in competent hands offers the best method of examination that we now possess. Let me repeat the phrase, "in competent hands," for even as Sir Joshua Reynolds was wont to mix his paints with brains, brains must be added to the mixture of buttermilk and barium, which we administer to our patients.

A renaissance of interest in the gall-bladder followed the dying interest in the appendix. To the gall-bladder was now assigned most of our digestive ills. The operation of cholecystectomy very properly displaced the old operation for gall-bladder drainage. The proportion of recoveries was greatly increased. About this time an added interest was given to the study of gall-bladder pathology by the announcement of George that any gall-bladder, which was visualized upon the roentgen plate, or could be visualized upon the roentgen plate, was a pathological gall-bladder. Then, too, the excellent studies of many of our greatest pathologists added zest to the work. In a series of perhaps two hundred consecutive examinations of the gall-bladder by myself and operated upon by Dr. Robert L. Payne, almost without exception the examining pathologist rendered a report that the organ was definitely pathological. I say "organ" advisedly, because in the light of the newer physiology the gall-bladder is regarded as an organ with the definite function of the concentration of the bile, of expulsion, and, perhaps, also of absorption.

It was about this time that Lyon announced his non-surgical method of biliary drainage. This was based upon the assumption that the so-called sphincter of Oddi had a contrary innervation and that a solution of magnesium sulphate applied directly to the mucous membrane of the duodenum would cause an emptying of the gall-bladder. This discussion I have followed with the utmost interest. By some surgeons it was claimed that such was not the case, anatomists doubted the existence of a true sphincter at the ampulla of Vater, and still other medical men could see no essential difference between a dose of Epsom salts given by the mouth and one given by the duodenal tube. Into these various discussions it is not my intention to enter at this time. The aspiration of the duodenal contents undoubtedly seemed to confirm the theory of Lyon and undoubtedly was productive of the greatest good.

A little later we were thrilled by the announcement of Cole and Graham that by the administration of a "dye" of the phenolphthalein series we could visualize in no uncertain manner the gall-bladder upon the roentgen plate. Subsequently, we learned that the ingestion of food, particularly of fats and egg-yolk, would tend to empty the gall-bladder. If such were indeed the case, why would not a medical treatment of the infected gall-bladder (I do not, of course, refer to biliary calculi) be most rational. We could apply iodine to the interior of the organ through the ingestion of one of the iodine compounds of the phenolphthalein group, then, following this by food, we could cause an emptying and, finally, by giving a dose of magnesium sulphate, clear the intestine of the infected bile. For a long time I have held such an opinion. I have discussed this theory at the meetings of medical societies and I was even promised the assistance of a pharmaceutical house to try to determine just how much the gall-bladder could be sterilized.

Early in my work upon the gastro-intestinal tract I noticed that the administration of barium and buttermilk seemed to have a tendency to relieve various symptoms, which I had associated with a hyperacidity, perhaps due to some disturbance of the gall-bladder, or, reflexly, from a chronically diseased appendix, possibly also from some intestinal fermentation. I have had patients to call and request a prescription for some of the powder or mixture, which so signally relieved them. To the effect of the buttermilk I ascribed most of the relief, though I thought that perhaps the coating of the mucosa of the stomach by an inert substance relieved a hyperacidity even as the ingestion of sweet oil; yet the buttermilk seemed essentially to be the benefiting substance, more especially as Bulgarian sour milk had been so extensively advertised.

XUM

I also noticed in my work upon the gall-bladder before the advent of the "dye" test that there was often a series of indirect signs suggesting a pathology of the organ. Careful observation seemed to suggest that a peculiar marking of the ascending colon, as by gas, was as much an indirect sign of gall-bladder pathology, as an encroachment upon the bulbus duodeni or "cap." I was, moreover, struck with an occasional temporary relief after a cholecystectomy and I thought that this temporary relief was due to the rest in bed, the restricted diet and the careful regulation of the bowel. The administration of the "dye" seemed, as I have said above, to offer an excellent medical treatment to a diseased gall-bladder, but I little thought that the relief following the administration of the sodium tetraiodophenolphthalein was due almost as much as to its antiseptic action upon the intestinal contents.

Some years ago Mrs. C. was referred to me for an examination of the gall-bladder. The shadow of the organ was readily shown upon the roentgen plate. This shadow was accompanied by a ptosis of the kidney. A diagnosis of a pathological gall-bladder was, accordingly, made, and the patient operated upon. The gall-bladder showed pathology and was of a "strawberry" type. Some time later, however, the symptoms returned. A microscopical examination of the stool, I am told, showed the presence of the giardia. The use of one of the arsenicals completed the cure. Naturally, the question arises: Was the gall-bladder primarily diseased, or was the infection of the gall-bladder due secondarily to the presence of the giardia? I remember another case. Mr. O. complained of a pain just to the right of the epigastrium and more specifically in the right hypochondrium. Accordingly, the kidney was suspected. The roentgen examination showed a kidney normal in size and position and an absence of a calculus in the urinary tract. An examination of the gall-bladder then ensued. The response to the "dye" was normal. The gall-bladder apparently showed no pathology. The symptoms disappeared. The patient recovered. What was the pathology? Was it that the administration of a strong antiseptic had had some action upon an intestinal fermentation?

As from the stone age to the bronze age and in turn to the iron age the cultural history of the human race has progressed, so from a consideration of the appendix and the gall-bladder our attention is now directed to the colon as the seat, in part at least, of many of the ills of the digestive tract. This is my own belief and it is to a certain aspect of colonic disease that I would direct your attention. This I shall soon explain. If my preliminary discussion has been a prolonged one, the attempt has been made to show some of the gradual evolution in the story of epigastric pain. I am often consulted for an epigastric pain and after a negative examination of the stomach, the terminal ileum, the gall-bladder and perhaps the appendix, I have almost invariably found a certain amount of gas in the hepatic flexure of the colon. This may or may not be accompanied by a constipation or a diarrhoea. It is, however, almost invariably relieved by the administration of the meal of buttermilk and barium and often by the sodium tetraiodophenolphthalein. What is the essential pathology? Is it a true colitis? Is it a question of intestinal fermentation? This we shall briefly discuss.

If we will analyze the pain of a nephritic or biliary colic, we must conclude that almost invariably the pain is due to pressure. The same thing exists in the case of the ascending colon. It is this, to which I would call your attention. This is the source of epigastric discomfort, to which I have alluded. It is the pressure of air or gas upon the ascending colon, and more particularly upon the hepatic flexure, that sets up an irrigation of the nerve filaments making up the plexuses of Meissner or Auerbach. This irritation is transmitted along the course of the vagus and referred to its terminal filaments in the region of the epigastrium. Even as in the case of the "dying" pulp in the pulp-chamber of a tooth, we may have all the gradations of discomfort from a distress almost subconscious to an acute misery. Likewise, the relief of the tension, as by the expulsion of gas or air in the one case through the natural channels, or in the other case through the opening made by the dental surgeon, brings a prompt relief. Just what to call this I hardly know. To my mind it is a true colitis; it also resembles some form of a fermentation. Yet this fermentation produces an irritation. Perhaps, the term acute ascending colitis will serve as well as any other. Personally, I believe that this is a distinct

XUM

pathological entity. Rarely does the retention of air or gas at the splenic flexure or descending colon cause a reference of the pain to the epigastrium. It has been well said, indeed, that he who would master the art of internal medicine must master the problem of syphilis. May I add that he who would be master of the subject of gastro-enterology must be familiar with the manifold functions and distribution of the vagus?

The etiology of the acute ascending colitis, to which I have alluded, is not hard to find. It may be of an organic, functional or neurotic origin. You are all familiar with the anatomy of the normal colon. You are more or less familiar with the variations as found by roentgenological studies. I say "roentgenological studies," for this is a study of living pathology, albeit by transmitted light or shadows, but it differs widely from the pathology as found on the post-mortem table. I have observed malformations of the ascending colon due to a retro-caecal appendix. I have observed acute angulation of the hepatic flexure, ptosis of the caecum and ptosis of the transverse colon. In some cases, indeed, it would almost appear that Nature had overlooked the formation of a ligament between the hepatic flexure and the liver or other organ. Thus we frequently find a right sided ptosis. Given, therefore, any of these conditions, it is easy to see that a stasis of the contents of the ascending colon must result with a consequent fermentation.

Then, too, we must reckon with an intestinal fermentation *per se*. We must analyze the habits and occupation of the individual. In my own experience this is particularly likely to happen when a residence is not provided with a suitable toilet. The discomfort of arising upon an inclement night and retreating to an outhouse naturally suggests a repression of the act of defecation. Likewise, a postponement of defecation due to the pressure of business affairs, an unsavory retreat, as in the case of so many of our railway coaches, and a sedentary occupation, would seem to develop an intestinal fermentation. This, to my mind, is the usual beginning of an acute ascending colitis, although dental infection and pyorrhea often play a leading part.

To the anatomical and functional causes of an acute ascending colitis let us add a cause far more common. I refer to the pernicious habit of air swallowing. A friend tells me that upon one occasion he was worried, that somehow or other nothing would remain upon his stomach, that he resolved to take a short vacation. *En route* he was tempted to try a meal of lemon pie and milk. Yet, strange as it may appear, no distress resulted; some internal craving was apparently satisfied. The common hunger appearing in the case of worry and its appeasal only by the greatest gormandizing, is most familiar. It is a case of neurotic hyperacidity; the food absorbs the excessive acid in the stomach or the gas generated in the ascending colon. Of this state I can speak from a personal knowledge. It largely explains the so-called nervous indigestion, of which we hear so much. A nervousness causes the indigestion; the indigestion, in turn, causes the nervousness; a cycle great in its possibilities and simulating any of the diseases of the gastro-intestinal tract. But let the spasm disappear; let the hyperacidity be absorbed by more food; let there be a belching or a rectal expulsion of gas. We behold a different picture. As in the case of the aching tooth, the pressure has been relieved.

I do not feel that there is much of interest to add to what I would describe as an acute ascending colitis. It may be almost subconscious, "belly conscious," or even an acute pain suggestive of gastric or duodenal ulcer. It is often confused with a pathological gall-bladder. It may be anatomic, functional or neurotic. It is the duty of the examiner to determine which. It is only by an earnest examination of the patient himself and by a competent roentgen examination of the gastro-intestinal tract that we can arrive at a satisfactory or final conclusion. To my mind every patient is entitled to this and, consequently, I would proclaim that the treatment of an acute ascending colitis is medical rather than surgical.

This treatment very naturally directs itself into the elimination of the cause. If it is due to certain malformations of the colon, some form of supporting belt or binder should be employed. If it is due to the complications of an old appendicular lesion, which alters the morphology of the ascending colon, the removal of the offending member must be considered. Be it well remembered, however, that post-operative adhesions and scar tissue must

be reckoned with. If it is due to habitus, this must be corrected as far as possible. Exercise in the open air with regular habits of defecation and the use of laxative fruits may be all that is needed. An extra supply of vitamin can be added in the form of orange or tomato juice. According to the best authorities, however, it is practically impossible to change the intestinal flora. But as buttermilk and yeast are the craze of the laity, these will do no harm and possibly some good. Small doses of barium sulphate will almost always relieve. Sometimes this must be supplemented by the use of a mild laxative, such as mineral oil or psyllium seed. Belladonna will often relieve a spasm. A change of diet is often beneficial; in any case, however, the diet must be a full and liberal one. For that other form, to which we have alluded as the "pernicious habit of air swallowing," only the relief of the fundamental obsession is likely to be of benefit. But, as most of these cases are prone to lose weight, an effort must be made to fatten them. Tact and persuasion with gaining of the patient's confidence and the attempt to restore to him a normal manner of living are the underlying factors of any treatment.

Of the many ills of the gastro-intestinal tract, which it has been my privilege to observe upon the screen and upon the roentgen plate, the status which I have discussed as an acute ascending colitis is by far the most common. It is usually included in a general discussion of the diseases of the colon and passed over lightly. But the discomfort is a real one. I believe that an acute inflammation of the ascending colon with its distention by air or gas is a real pathological entity. It must be differentiated from an inflammation of the remaining colon. Every patient, as we have said above, deserves a complete roentgen study to determine whether his complaint is an anatomical, functional or neurotic one. Corrective and supporting measures for the relief of the anatomical causes, inhibition and relief of the gas in the case of the functional causes, and moral suasion in the neurotic cases with an attempt to improve the physical condition of the patient and increase his weight, —these, in my opinion, are the treatments to be employed in the relief of the entity which I have discussed as an unappreciated source of epigastric distress and to which I would give the name of acute ascending colitis.

603-6 *Medical Arts Building.*

DISEASED TONSILS AND ADENOIDS AND INDICATIONS FOR THEIR REMOVAL.*

By J. R. GORMAN, M. D., Lynchburg, Va.

In this paper I make no effort to be deeply scientific. I explain my statement by adding that my effort has been to write a paper based entirely on my personal observations and experiences, and one, therefore, I hope, practical.

Tonsils and adenoids in relation to health and disease, despite their so-called common place niche in the scheme of things medical, hold a most important place. I wish particularly to stress the presence of adenoids in the adult.

The examination of any adult for diseased tonsils, especially when local anesthesia is used, is positively incomplete without a careful effort to determine the presence or absence of adenoids. This is best accomplished by the use of the naso-pharyngoscope. Its use is quite simple and affords a direct view into the nasopharynx. It requires the use in the nose and nasopharynx of a small quantity of cocaine solution, usually about 2 per cent. About ten minutes after the application of the cocaine solution, the Holmes' direct, or corrected vision, naso-pharyngoscope is introduced into the nasopharynx through the nose and the nasopharynx is examined by direct inspection. Lacking its use, posterior rhinoscopy may be done with a small post-nasal mirror, with which an indirect view may be had of the nasopharynx. Its use, however, is frequently very unsatisfactory in individuals with sensitive throats, who gag easily.

The use of the naso-pharyngoscope is limited to individuals over fifteen years of age.

If adenoids are found in conjunction with diseased tonsils, a general anesthetic is used. The reason for this will be brought out later in this discussion.

I do not believe that a tonsillectomy should be approached with the care-free attitude that most individuals assume in regard to so important a procedure.

A great many tonsils are removed without proper consideration as to both the immediate

*Read before the South Piedmont Medical Society, at Danville, Va., November 25, 1930.

and remote results. I have seen a great many patients who have had them removed with no relief whatever from the complaint which caused them to present themselves to their physician.

I wish at this time to condemn a very common practice amongst otolaryngologists, that is the very dangerous procedure of removing tonsils and adenoids without first having a complete physical examination, including a urinalysis, done on every patient to be operated upon. This I insist upon with my patients. When the reasons are explained, they are without exception all glad to have this done. Of far less importance is a coagulation time if a careful history is taken before the operation. The most important question, in any given case, is to decide whether this particular individual is going to obtain the expected and desired relief from the removal of the tonsils, and, equally important, the adenoids, if any exist, especially in adults who wish to have a tonsillectomy done under local anesthesia. The complete removal of adenoids is impossible of accomplishment under local anesthesia, because the effect of its use is to very decidedly shrink the adenoid tissue, and the complete mass is seldom if ever removed. Of this I am quite confident, and have long since given up the attempt. It is in addition quite painful to the patient, and in many instances punishes them severely. I have had, in many instances, to remove the adenoids a second time on individuals who had previously had them removed under local anesthesia. In several instances, amongst my own patients, I have had to subject them to second operation under general anesthesia for the removal of adenoids following the use of local anesthesia for removal of the tonsils. This was due to the fact that I had not examined them for adenoids in the first instance.

For several years in my own work, if both the tonsils and adenoids have, for any reason, to be removed, and the patient cannot take a general anesthetic prolonged sufficiently to remove both the tonsils and adenoids at the same time, the tonsils are removed under local anesthesia and the adenoids at a later time under nitrous oxide and very light ether anesthesia sufficient to keep them quiet from three to five minutes. I have carried out this procedure many times with most gratifying results.

The reason for all this precaution is the fact that there is serious risk of life when a general anesthetic is used, immediately following the local removal of tonsils.

This fact is borne out by the report of a special committee which was originally appointed by the A. M. A. to study the cause of sudden death during and following the use of local anesthesia in otolaryngology and other cases. The committee was composed of some of the most eminent internists, surgeons, and otolaryngologists in the United States, amongst them being Drs. E. C. Cutler, Peter Bent Brigham Hospital, Boston, representing surgery; David I. Macht, medicine, Johns Hopkins; Alexander Randall, urology, Philadelphia; Henry S. Dunning, stomatology, New York City; Robert A. Hatcher, pharmacology, Cornell Medical College; Charles S. Norris, Chief Medical Examiner, pathology, New York; Robert S. Lamb, ophthalmology, Washington, D. C.; and those representing otolaryngology were Dr. Emil Mayer, New York, chairman, who selected to help him with this work Drs. Ross Hall Skillern, Philadelphia; Robert Sonnenchein, Chicago, and William B. Chamberlain. The work of this committee extended over a period of eleven years, the final report having been made last year. The full report covered over one hundred large printed pages. They reported the analysis of forty-three unreported deaths during 1920-21-22, due to the use of local anesthesia. This, however, did not include all the deaths which took place, for evidently there were many, many additional cases unreported, as the questionnaire sent out by the committee was only sent to the members of the A. M. A. who were members of the section on otolaryngology and ophthalmology:

Deaths caused by—

Alypin	1	Cocaine	26
Butyn and Cocaine	1	Not classified	2
Slovaine	1	Bertyn	4
Apothesine	4	Procaine	2
Other causes than local anesthesia			2

One of the recommendations embodied in this report was the condemnation of the use of general anesthesia, following immediately the use of local anesthesia. The committee also found that "not a single synthetic preparation thus far presented for our use, as a local anesthestic, is non-toxic. This does not deter us from its use, but it will surely put us on

guard and free us from the belief that any one of them is absolutely free from danger."

At Camp Lee during July, August, and September, 1918, we did an average of fifty local tonsils each day. In August there was done seven hundred and fifty locals. Of the total number done during those three months there was not a single serious toxic manifestation due to the use of local anesthesia. The anesthetic used was novocain 0.6 per cent with five drops of 1 to 1,000 adrenalin chloride to each six drams of solution. This solution was always freshly prepared under the direct supervision of the officers in charge.

In my private practice I found that this amount of adrenalin caused a severe splitting headache, and some of the patients complained most bitterly. I am still using 0.6 per cent novocain, but have decreased the amount of adrenalin to two drops of 1 to 10,000 to each six drams of solution. I also use an ampule of coagulin to this amount of solution.

In the use of local anesthetics for nose and throat work, especially tonsillectomies, I observe the precaution of preparing, freshly, myself, every drop of local anesthetic used. I will not use a solution prepared and handed me by someone else. This precaution is well worth taking for the very important reason that a large number of deaths have occurred as a result of mistakes in preparation of the solution used.

Anyway you take it, the removal of tonsils and adenoids is a procedure worthy of a great deal more serious consideration than the average physician, specialist, or layman accords it.

The most useful method of examining these patients is as follows: First, a careful history must be taken. This is of great importance, because, from the history alone, we may be able to determine the necessity for operation. The next thing to do is to inspect the tonsils. The tongue is held down by metal tongue depressor, care being used not to place the depressor a little more than halfway back on the tongue. This prevents gagging and allows a much more satisfactory examination. We note the condition of the anterior pillars, whether red and injected; scars showing previous peritonsillar abscesses; whether the tonsils are small or hypertrophied; submerged or projecting into the pharynx; whether the follicles and crypts contain visible pus or concretions, and whether there are many inflamed granular patches on the posterior pharyngeal wall.

Whatever the condition of the tonsils might be, the best method of examining them is the use of a long, curved very rigid steel applicator, with cotton wound about the tip. The curved portion of this applicator is placed against the anterior pillar with sufficient upward and outward pressure to express pus and at the same time evert the tonsil, bringing the crypt and follicles into view. The expression of free pus, or large quantities of foul-smelling cheesy material is, in itself, sufficient indication for removal of the tonsils. But when this condition exists in combination with any one of the many conditions by which a focus of infection makes itself known, viz., deafness of various types, exclusive of otosclerosis, severe tinnitus aurium, with or without deafness, vertigo, low blood pressure, general debility, arthritis, not due to G. C., or other foci, neuritis, pyelitis, frequent attacks of tonsillitis, previous incomplete removal of the tonsils, certain types of kidney disturbances, especially albumen with none of the other signs of a nephritis, thyroid enlargement, endocarditis, acute or chronic, pericarditis, with or without effusion, glandular infection, both of the anterior and posterior cervicals, certain cases of hypertension, recurrent attacks of otitis media acute suppurative, and chronic otitis media suppurative. Free pus being associated with anyone of these conditions, the indication for removal of the tonsils and adenoids becomes absolute.

I have never seen the removal of tonsils help materially in cases of acute or chronic nephritis except in children.

Where there is sufficient doubt to warrant it, a culture may be taken deeply from the crypts of the tonsils. If it shows the presence of any one of the various strains of streptococous, this may be taken as a positive indication for the removal of the tonsils.

In cases of arthritis, I nearly always have a culture made at the time of removal of the tonsils, and if it shows any of the strains of streps, I have an autogenous vaccine made for use at a later time if the patient does not show the expected improvement. Its use will frequently obtain extremely satisfactory results especially where there seems to be some permanent enlargement of the joints.

In cases of doubt I have on several occasions examined the throats of some of my patients as many as ten or twelve times before coming to the conclusion that the tonsils should be

XUM

removed. Some of the most dangerous and troublesome tonsils are the small submerged tonsils, and seemingly innocent ones. I have on several occasions seen tonsils which contained deep abscesses on removal, yet at the time of examination showed absolutely no free pus. The mere fact that tonsils are hypertrophied does not mean that they should be removed.

With children under ten years of age the question of removal of the tonsils frequently depends entirely on the history. Frequent colds, bronchitis, frequent attacks of unexplained temperature, otitis media, mouth-breathing, general appearance, condition of nourishment, progress in school, glandular enlargement, and frequent attacks of sore throat. The examination of children for tonsils and adenoids is no easy task; one has to judge almost entirely from the appearance of the tonsils together with the above conditions for indications for removal. I wish to speak of one of the methods of examination only to condemn it, that is, the introduction of the finger into the nasopharynx through the mouth. This is hardly necessary, for in the course of the removal of tonsils and adenoids of hundreds of children I have not seen one who did not have adenoids, and who was not benefited by their removal.

I would like to report a case which shows the importance of examination for adenoids. White woman, age sixty-seven, complaining of deafness, was treated by me for a period of six weeks, using all of the usual methods of treatment—inflation, massage, etc. On account of her age, it never once occurred to me that she might have adenoids. However, one day a ray of light passed through my brain,—examine this woman for adenoids. Adenoids she did have, and quite as large a mass as one would expect to find in a four year old mouth-breather, the removal of which promptly relieved her deafness. This was done in 1924. She occasionally comes in to see me about other things, and her hearing is still normal.

It is impossible to write a paper on this subject without going over some of the contra-indications and complications. Cases with active tuberculosis of any type, in my judgment, should be let severely alone from an operative standpoint. Tubercular involvement of the larynx is a positive contra-indication, as also a diabetes, anemias, except those secondary to a focus of infection, acute or chronic parenchymatous or interstitial nephritis; likewise, myocarditis, especially with decompensation, acute nasal and bronchial affections, asthma under general anesthesia, anomalous blood-vessels.

There are a number of complications which may be a source of considerable annoyance and discomfort, even danger to the patient. Among these are hemorrhage at the time of operation and post-operative, as late as ten days or two weeks. Adenoid hemorrhage is occasionally very, very difficult to control. I have seen one child die as a result of this, and on one occasion very nearly lost an adult patient myself from adenoid hemorrhage occurring eight days after removal. Other conditions to be remembered are abscess of the tissue contiguous to the fossae, hematoma, acute enlargement of the thyroid with thyrotoxicosis (rare, but it does occur), lung abscess, pneumonia, otitis media, acute suppurative, or exacerbation of chronic otitis media.

The conclusion I have reached is that the removal of tonsils and adenoids is not the simple procedure most people regard it, and that there should be definite indications before subjecting an individual to this procedure. At the same time it is one of the most useful and health-giving procedures at our disposal.

Medical Arts Building.

GIARDIASIS.*

By PAUL F. WHITAKER, M. D., Kinston, N. C.

The literature relating to intestinal protozoa, with the exception of endamoeba histolytica, is much confused. While there is no doubt as to the pathogenicity of endamoeba histolytica, there is a wide difference of opinion as to the pathogenicity of most of the intestinal flagellates, including giardia intestinalis. There are some writers, notably Boeck, who after careful studies conclude that it is an entirely harmless parasite, incapable of producing symptoms, while there are others, including Lyon, Cheney, and Reed, who are quite convinced that it may cause marked disturbance. A personal communication to the writer from Dr. Walter C. Alvarez, of the Mayo Clinic, stated that in his own opinion he believed it to be pathological, but qualified that statement by saying that every other condition capable of producing the trouble in question should be eliminated before concluding that the symp-

*Read before the Seaboard Medical Association of Virginia and North Carolina, at Elizabth City, N. C., December 2-4, 1930.

toms were due to giardia. Without going further into this difference of opinion, the writer is convinced from experience with his own cases that giardia is distinctly pathogenic, and that its presence may explain many obscure and bizarre gastro-intestinal manifestations.

Giardia lamblia is a pear shaped organism, measuring from 10 to 20 microns in length. It has both a blunt or rounded end, and a pointed end. When viewed in its broad dimension, it has, on the ventral surface of the blunt end, a circumscribed depression with elevated edges, "the sucking disc," by which it attaches itself to the tops of the epithelial cells of the intestinal walls. Within this depression two nuclei are seen, symmetrically placed on either side of the midline. The organism has four pairs of flagella, three emerging from each side of the organism, and one pair trailing from the small pointed end. In the stools, giardia appears to bob about briskly with a peculiar tumbling motion, but without true progress in any direction. The normal habitat of giardia is in the duodenum and jejunum, and the motile flagellate form is not usually found in the stools unless the patient has diarrhea or has undergone active purgation. It is readily and easily recognized in the duodenal contents, however. There has been much discussion as to whether the motile form invades the biliary system. Smithies has reported the only case on record where the parasite was found in a gall-bladder removed at operation.

At some period in their life history the flagellates undergo encystment. These cysts are passed out in the feces, and the finding of them is the common method of detecting the presence of an infection. They may be extremely numerous and, while less conspicious than the motile forms, are easily identified. They appear as small, oval, sharply outlined bodies with a rather complicated and minute inner structure, surrounded by a fairly thick hyaline wall.

While different species of giardia have been found parasitic in man, dogs, cats, rabbits, rats, mice, and frogs, Simon was unable to infect rats with the human giardia and it may be concluded that human giardiasis is of human origin only. It seems certain that human giardiasis is spread from one person to another by ingestion of the cysts that occur in the feces. Man may ingest the cysts directly by contamination with faeces on his fingers, food, or water; indirectly through the agency of the housefly, which may feed on faeces containing the cysts, and then deposit them on food or drinking water. According to Boeck, the cysts may live for sometime in water, but die quickly on drying. It is, therefore, doubtful that the cysts are ever airborne in dust in a viable state.

Until fairly recently, giardia has been considered a parasitic infestation of only tropical or subtropical zone. More recently it is being increasingly recognized in temperate zones, and is probably now much more common than is generally recognized. While as already stated its pathogenicity has been disputed, in the light of experience with the following cases, the writer finds it impossible to believe that it is a safe or harmless parasite under any circumstances. All of the cases reported had a complete diagnostic survey.

Case No. 2280. Mr. L. E., age twenty, student by occupation. Came in complaining of indigestion of approximately eighteen months duration. He is troubled with eructation of gas almost constantly after eating, and has been constipated since the onset of his trouble. For the past month he has had a vague pain and sense of uneasiness in the upper right abdominal quadrant which radiates into the retro-sternal area and right shoulder. The patient is relieved for approximately an hour by eating. His appetite has gradually diminished and he has lost twelve pounds in weight. He is nervous and apprehensive over his condition. Six months after onset of symptoms he had his tonsils removed. He has never been beyond the boundaries of North Carolina, save for a visit to Washington, D. C., during his senior year in high school.

Complete physical examination revealed nothing of significance save tenderness on deep pressure in the epigastrium just to the right of the midline, and tenderness in the right costo-vertebral angle. The blood revealed a mild secondary anemia, the R. B. C. being 4,120,000, and the hemoglobin 76 per cent. The Wassermann was negative, and the differential count revealed 4 per cent eosinophiles. The urine and blood chemistry were negative. Gastric analysis revealed a normal curve of free and total acidity, and showed no blood. Gastro-intestinal X-ray was negative, and the stomach emptied in six hours. The stool examination revealed the presence of encysted

XUM

forms of giardia and the duodenal contents contained the flagellate forms. *Diagnosis:* 1st. Secondary anemia; 2nd. Giardia infestation.

The patient was given six injections, 0.6 gm. each, neo-arsphenamine, at weekly intervals, and six trans-duodenal biliary drainages with the instillation into the duodenum of saturated solution of magnesium sulphate. He was given liquid petrolatum for the constipation, and iron and arsenic by mouth for the anemia. One week after the sixth injection of neo-arsphenamine, both the stool and the duodenal contents were negative for giardia, and the digestive symptoms and constipation were improved. Three months after beginning treatment the stool and duodenal contents were still negative for giardia. The patient has gained a total of eight pounds in weight, and was entirely free from digestive symptoms, pain and constipation. He has been asked to return in a year for another examination of his stool and duodenal contents.

Case No. 2278. Mr. F. M. M., age sixty, referred by Dr. S. Occupation, merchant. His chief complaint was diarrhea, head trouble, sense of itching around the neck and on anterior surface of legs; numbness and tingling in feet and legs, and sense of burning in the hands. The patient states that he was a healthy man until 1918, when he had influenza. Since that time his health has steadily declined. He has almost a constant dizziness with tinnitus and discomfort in his ears. A dull aching pain around the occiput is constantly present, and at times becomes severe. He has gradually grown weaker and at times staggers when he walks. He is intensely nervous, and suffers from insomnia. Diarrhea has been almost constant for twelve years, having from eight to twelve stools a day. At times he has had as high as thirty stools a day. The diarrhea is worse in the morning, is not accompanied by colicky or griping pains and, though his stools contain a great deal of mucus, only occasionally have they contained blood. He has been to numerous physicians, and taken much medicine with only temporary if any relief. He was residing in Texas when his present illness started. He denies venereal infection.

Complete physical examination revealed the following positive findings. The patient's countenance was dull and expressionless. He had a festinate gait and a scanning speech, and a gross intention tremor of the upper right extremity. Examination of the eye grounds revealed a blurring of the right disc. Physical examination of the chest and abdomen was essentially negative.

Laboratory examination revealed a moderate secondary anemia, the R. B. C. being 3,210,000, and hemoglobin 70 per cent. Gastric analysis revealed essentially normal curves of free and total acidity, and contained no blood or lactic acid. The duodenal contents were teeming with the motile forms of giardia, and the encysted forms were found in the stools. Spinal puncture did not reveal increased intra-cranial pressure, and the cell count and spinal fluid Wassermann were negative. There was slight increase in globulin. The urine and blood chemistry were negative. X-ray of the skull, and complete gastro-intestinal X-ray, including a barium enema, was negative. Basal metabolism determination revealed a basal metabolic rate of plus 4 per cent. *Diagnosis:* 1st. Paralysis agitans; 2nd. Secondary anemia; 3rd. Giardia infestation; 4th. Chronic diarrhea probably of protozoal origin.

The patient was given eight injections of 0.6 gm. of neo-arsphenamine at weekly intervals, with trans-duodenal drainage, and magnesium sulphate instillations. He was given hyoscine and Tr. hyoscyamus for the Parkinsonian syndrome. The improvement in the diarrhea was striking after the third injection of neo-arsphenamine. One month after the end of treatment, the patient's diarrhea had ceased, and he was having from one to two normal stools daily. The anemia and general appearance of the patient had improved, the red cells and hemoglobin being 4,020,000, and 80 per cent, respectively. This case is reported not because we believe that giardia had anything to do with the etiology of paralysis agitans, but in view of completely negative findings, save giardia infestation, to explain the etiology of the diarrhea, and, in view of the results obtained on treatment, we believe conclusively that it was the sole etiologic factor in the diarrhea.

Case No. 342. Mr. J. R., age thirty-six. Farmer by occupation. First seen in October, 1925. His previous history revealed nothing of importance. His family history revealed the fact that his mother and father died of pulmonary tuberculosis, and an uncle died of

cancer of the stomach. The chief complaint was stomach trouble of three years duration. About one-half hour after eating he would develop a feeling of fullness and distention in the epigastrium which was relieved somewhat by eructation of gas. On an empty stomach he would at times develop a gnawing burning pain, which would be relieved for approximately an hour by eating. The pain did not radiate. Occasionally he suffers from sour stomach which soda relieves. He has never had jaundice, has never vomited or passed blood by bowel, has never had dysentery, and has never had an attack of abdominal pain requiring a hypodermic to relieve. He is chronically constipated, taking laxatives three or four times a week. He feels better after a dose of magnesium sulphate. In addition to the gastro-intestinal complaints, he suffers from early fatigue, occasional frontal headaches, which are not of the migraine type, and nervousness. The digestive symptoms often cause him not to sleep well. His average weight is 145 pounds. His present weight is 128 pounds.

Physical examination shows an intelligent man of thirty-six years, of average build and height. He impresses one as having a phlegmatic temperament. Examination of the heart and lungs were entirely negative. Examination of the abdomen revealed definite tenderness in the upper right quadrant which was made worse by left lateral posture, and dorsal tenderness was elicited in the right costo-vertebral angle. The abdominal and remaining examination was otherwise negative. Blood and blood Wassermann were negative. Gastric analysis showed the presence of adequate free hydrochloric acid and no blood was present in the gastric contents. The stool was negative for ova and parasites, and negative for occult blood. (The writer was not familiar with giardia at that time, and may have overlooked them in the stool.)

Diagnosis: Chronic cholecystitis. The patient was given series of twelve trans-duodenal biliary drainages twice a week, belladonna and caroid and bile salts tablets with considerable symptomatic relief. In June of 1926, he returned again with practically the same complaints and findings. I taught him how to use the duodenal tube, and instructed him to use it twice a week for a period of three months. Again he obtained some relief from symptoms and, while not entirely relieved, remained fairly well until September, 1927, when he consulted me again. For the four weeks before consulting me he had suffered almost constantly with a gnawing burning epigastric pain, which radiated into the right shoulder. The previous tenderness in the upper right quadrant had dimished, and he was tender on deep pressure just to the right of the umbilicus. A gastric analysis done at this time showed a mild hyperacidity. He was placed on six feedings a day of a non-irritating diet, and alkaline powder four times daily and belladonna.

I heard nothing from him until March of this year when he came in to see me again. Since seeing me in 1927, he had consulted two other physicians and a chiropractor who, like myself, had not benefited him. His patience, fortitude, and charitable feeling toward the medical and chiropractic professions in the light of his disappointing experiences for nearly five years struck me as worthy of comment. In addition to the same old gastro-intestinal complaints he had become extremely nervous, and apprehensive over his condition, and had lost weight until he then weighed only 115 pounds, and was profoundly depressed. I again studied this patient exhaustively. Complete physical examination and laboratory studies were negative save for a moderate secondary anemia, the red cells being 4,447,000, and the hemoglobin 77 per cent. Gastro-intestinal X-ray revealed no demonstrable pathology. Examination of the duodenal contents showed them to be teeming with the motile form of giardia, and the stool contained the encysted form.

The patient was given the usual course of neo-arsphenamine, and again asked to use trans-duodenal drainage. It has been eight months since he started treatment the last time, and five months since he has had any treatment. He has gained twenty-one pounds, looks and says he feels like a different person. His digestive symptoms have disappeared. A stool examination one month ago failed to show the encysted form of giardia. My opinion is that this patient is cured and, had I been familiar with and recognized giardia infestation in 1925, it would have saved this patient five years of suffering besides the economic factor of time lost, and money expended for professional services.

The writer has had, including the three cases

XUM

reported above, a total of nineteen cases of giardia infestation. In three of these which time would not permit me to report, the symptoms could be definitely attributed to giardia alone, and the results of treatment were as striking as those reported. In the remaining thirteen, other conditions capable of producing the symptoms were found, and no conclusions as to the pathogenicity of giardia was drawn from these cases.

In closing, it is well to discuss briefly the treatment of this parasite. A review of the literature records numerous drugs used in the treatment of this condition, among which might be mentioned neo-arsphenamine, yatren, thymol, stovarsol, santonin, emetin, bismuth, castor oil, magnesia, sodium bicarbonate, dilute hydrochloric acid, salol, turpentine, sulphur, etc. In the hands of the South American writers, notably Greenway and Caxtex, stovarsol and yatren have given the best results. Thymol is used chiefly by the men reporting cases on the Pacific Coast. The writer has used yatren in one case along with emetin which had both an amoebic and a giardia infestation. This case is showing marked improvement under treatment, but has not been under observation long enough to warrant definite conclusions. The writer obtained such satisfactory results with neo-arsphenamine, and magnesium sulphate intra-duodenally that he has continued this treatment routinely, and still with satisfactory results. The contention of Lyon that magnesium sulphate intra-duodenally seems to have an inhibiting or paralyzing effect on the parasite is borne out by my experience, as numerous motile forms are seen in the duodenal aspirates after this drug is used. It would seem from the literature that in most instances adequate doses of neo-arsphenamine have not been given, and it is only in this instance that its use has been disappointing.

SUMMARY: 1. Giardia intestinalis is a parasite of clinical importance, being increasingly recognized in temperate zones. 2. In the writer's experience it has a definite pathogenicity. 3. Adequate treatment with neo-arsphenamine, with duodenal-biliary drainage, and instillation into the duodenum of saturated solution of magnesium sulphate, has given satisfactory results in the author's cases.

BIBLIOGRAPHY

1. Clinical Diagnosis by Laboratory Methods. Todd and Sanford. Sixth Edition.
2. Giardiasis: Frequency, Recognition, Treatment and Certain Clinical Factors. By B. B. Vincent Lyon and William A. Swalm. *American Journal of the Medical Sciences*, Sept., 1925.
3. Giardiasis In Man. By William C. Boeck. *Archives of Internal Medicine*, Jan. 15, 1927.
4. Intestinal Protozoa in Clinical Practice. Clinic of Drs. Alfred C. Reed and Harry A. Wychoff, Stanford University Hospital. *Medical Clinics of North America* Sept., 1922.
5. Intestinal Protozoa. Clinic of Dr. Marshall C. Cheney, University of California Hospital. *Medical Clinics of North America*, Sept., 1922.

Medical Arts Building.

PYRIDIUM THERAPY IN GENITO-URINARY DISEASES.

By LYLE M. MASON, M. D., Washington, D. C.
Director, D. C. Venereal Clinic; Attending Urologist, Garfield Hospital.

Genito-urinary infections present a large field for medical experimentation. The search for specific drugs goes on without interruption, and although the problem of urinary antisepsis has received no small measure of attention from the research investigator in the past few years, very few drugs approaching the desired results are known. One of the outstanding drugs in this class is pyridium, and it has been my privilege in the past two months to give it a clinical trial. Chemically it is phenyl-azo-alpha-alpha-diaminopyridine hydrochloride, a fine, dark red crystalline powder, slowly soluble in cold water, but soluble in boiling water, alcohol, glycerin, petrolatum and lanolin. It may be administered orally (in tablet) or applied locally (in solution, powder or ointment). Our clinical experiments were made to establish the claims that pyridium is non-toxic and non-irritative in therapeutic doses, having marked tissue penetrative power and is rapidly eliminated to a high degree through the urinary tract, staining the urine a yellowish red, that in aqueous solution it exerts an antibacterial action on the gonococcus, the streptococcus, the staphylococcus, and a milder one on the colon bacillus. Its penetrating action is shown by its staining yellowish-red the secretion of the prostate and seminal vesicles, and it has the advantage of being therapeutically active in both acid and alkaline urines. It is generally used in tablet form, each tablet containing 0.1 gm., dosage usually two tablets after each meal; in liquid form in 1 per cent aqueous solution for irrigations, injections or

local application; in powder form, as a dusting powder; or in ointment form as in application to ulcers.

In the short space of two months during which this drug, pyridium, has been given a clinical trial, two classes of cases have shown outstanding results; these are (1) cases of infection in the prostate; acute, subacute and chronic (lower urinary tract infections), and (2) cases of chronic and subacute pyelitis and pyelonephritis (upper urinary tract infections). About twenty cases of prostatitis, several bordering on subacute states (almost demanding rest in bed), have been treated and responded to two tablets after meals, with subsequent marked progress in their clinical symptoms (particularly pain and urinary frequency) and marked improvement in the smears of prostatic secretion made on each visit.

Compared to prostatitis, it is much harder to substantiate progress in chronic pyelitis cases, but freedom from all clinical symptoms and careful weekly urinalyses have demonstrated fully to me the marked benefit obtained by use of pyridium in therapeutic doses.

Case 1.—E. G., male, white, married, age twenty-three, chauffer, had a very severe subacute prostatitis following a gonorrheal infection. First seen August 24, 1930. For a month usual treatment very mild massage with bladder irrigations and sandalwood oil p. o. was then put on pyridium, and at once improvement noted. Massage continued, followed by posterior instillations of ½ per cent strength. Pyridium was continued and progress noted. At first this treatment was very irritating, but later it was comfortable and the prostatic secretion was very definitely colored by pyridium. Prostatic secretion on December 8, 1930, showed very few (8-10) pus cells to high power field. Greater progress made in this fulminating case than in similar ones without pyridium.

Case 2.—W. W., single, male, white, salesman, age twenty; had had gonorrhea for six weeks; self-treatment by using 15 per cent neosilvol; when first seen October 4, 1930, had a subacute prostatitis with severe backache and pain in both limbs to knees; put on semi-weekly massage with posterior instillations pyridium ½ per cent, and one pyridium tablet after meals. Rapid progress made in three weeks under this regime, seemingly more than usual for average case, and at end of stay here secretion showed an average of 6-10 pus cells to high power field of microscope, patient being free from all symptoms.

Case 3.—N. T. F., male, white, widower, labor leader, aged sixty-four, had a previous gonorrheal infection in 1929, and treated until discharged cured. On admission June 14, 1930, the prostate was found to be enlarged to left, with a very spongy spot on right side which bled on even very light massage. The usual treatment was given during the first month; later one tablet after meals was added, and semi-weekly massage was followed by instillations. Marked improvement occurred during the two months when using pyridium, until discontinuance of treatment because of freedom from all symptoms.

Case 4.—S. M., male, single, white, lawyer referred by a gastro-enterologist for examination of prostate; prostate large, somewhat boggy and tender, so that no secretion was obtained—recommendation made to repeat examination in three or four days. Returned in six months with history of a non-specific urethritis treated elsewhere. On prostatic examination, the secretion was found to contain 50 or more pus cells to each high power field. Massage was continued sporadically for five months and a recent examination of the prostate showed an average of 10 cells to H. P. F. Pyridium treatment with massage every five days was then instituted. Examination after six weeks (December 8, 1930) showed the prostate to be apparently normal, and the secretion having an average of 5 or 6 cells to the high power field.

Case 5.—C. A. A., male, white, bank clerk, single, first seen September 24, 1930, when a diagnosis was made of chronic prostatitis and numerous urethral strictures. Venereal diseases denied. Passage of sounds caused much bleeding at first. Then put on pyridium, one tablet after meals. Bleeding disappeared, urine improved rapidly, and patient was able to continue his daily routine. Prostate improved rapidly, as well as rapid change in number pus cells in prostatic secretion. Patient was on rest period December 10, 1930. Prostate to be examined again; patient free from all symptoms.

Case 6.—L. B., male, married, white, printer, first seen on account of pain in left scrotum. Examination showed left varicocele. Suspen-

XUM

sory recommended. Not seen again until September 15, 1930, at which time examination showed acute gonorrheal urethritis. Patient was under treatment by his family physician with whom he wished to continue. Again seen October 28, 1930; diagnosis now made of subacute prostatitis; for five days stayed in bed, using hot rectal irrigations and pyridium one tablet after meals, and then resumed ambulatory treatment, the pain in back and urinary frequency having abated. Light massage every five days was soon followed by more strenuous massage semi-weekly until now the urine is clear and all symptoms are gone, but the prostatic secretion still shows 30 pus cells to high power field. The progress of effective treatment was good for the short time treated.

Case 7.—A. V., single, male, white, teacher of French, has suffered from a chronic stubborn prostatitis since October 6, 1926, for which, periodically, he takes a few massages and irrigations. On September 22, 1930, he came in with a mild flare-up of old symptoms and he was given a potassium permanganate irrigation (1-6000), through and through, and put on pyridium, one tablet after meals. One week later all symptoms had subsided, and on massage secretion from prostate showed 35 pus cells to high power field. He remarked on the rapidity with which the symptoms disappeared, but failed to report for further treatment.

Case 8.—W. C., male, married, white truck driver, treated in 1926 for a mild, chronic prostatitis with urethral strictures. Occasional monthly visit since for dilatation. Seen on September 30, 1930, when a Kollman dilator was used to dilate his old urethral stricture. The dilatation was carried to size French 32. About three days later he had a purulent urethral discharge, in which no organisms could be found. A mild potassium permanganate anterior irrigation was given (1-6000) and he was put on pyridium, one tablet after meals. Four days later no discharge could be obtained, and examination of the prostate showed numerous pus cells per high power field. We were agreeably surprised at the rapidity with which symptoms of urethritis subsided.

Case 9.—B. H. M., male, married, government clerk, aged sixty-one, seen first April 19, 1930, at which time cystoscopy showed ten ounces residual urine, and a diagnosis of prostatic hypertrophy was made. Subsequently the prostate was removed, and the abdominal wound healed within three weeks. Ten days after leaving hospital he developed a mild epididymitis on the left side, which responded favorably and quickly to pyridium treatment, one tablet after meals, and elevation of the parts with a suspensory. The patient lost no time from work on account of infection. A few treatments to the bladder and prostatic region removed the pathology back of epididymitis, with complete clearing of urine and symptoms. In this case pyridium apparently was responsible for excellent results obtained.

Case 10.—Mrs. D. B., female, white, married, housewife, aged twenty-four, referred by a general surgeon for chronic pyelitis after he had treated the patient with bladder irrigations and instillations for two months with only slight improvement. Cystoscopy and ureteral catheterization showed bilateral infection and at first silver nitrate 1-3 per cent was used as the solution for irrigating the pelvis of the kidneys. Occasional bladder irrigations with potassium permanganate were given and then were followed by instillations of 10 per cent argyrol, but the irregularity of attendance of patient to our clinic retarded progress of favorable results. Later pyridium in full dosage, two tablets after meals, as well as the 1 per cent solution in the kidneys seemed to help, but very little permanent gain has been made in the ambulatory treatment in fifteen months. The patient, who is the daughter of a doctor, says pyridium is the best drug used, and she has tried many, and it is my opinion that the best results so far obtained have been made while on pyridium. Hospitalization with several frequent irrigations of kidney pelvis is urged and will probably be attained shortly.

Case 11.—Mr. F. J. Y., male, white, widower, aged eighty-four, had a suprapubic two-stage prostatectomy three years ago, which was complicated by left epididymitis several weeks after reaching home. Sporadically a mild flare-up in epididymitis accompanied by cystitis has occurred and was in each instance relieved quickly by a suspensory, pyridium by mouth, one tablet after meals, and dilatation of the neck of the bladder with Kollman dilator, followed by instillation into the bladder of a weak solution of pyridium. Two or three visits are made about every three to four

months, after which the patient remains well for several months Pyridium by mouth in such a case is unusual in its rapid action in decreasing the infection as well as in subduing urinary frequency and pain.

Case 12.—Mrs. C. C. L., female, married, white, vocalist, aged fifty, has suffered for past ten months with bilateral chronic pyelitis. Cystoscopy with double ureteral catheterization was done on February 24, 1930, at which time 15 per cent argyrol was used to irrigate kidney pelvis with only a fair result. The patient was then put on full doses of caprokol, which removed all symptoms with the exception that the urine was full of pus until April 3, 1930, at which time a second attack put her in bed with fever, nausea and pain over kidney area. Cystoscopy was again advised and refused, and none has been allowed since. The patient was then put on a full dosage of pyridium, two tablets after meals resulting in marked improvement, and up to present time, December 1, 1930, she has had no more attacks. She now uses one tablet of pyridium after each meal. Frequent urinalyses have shown consistent, steady improvement.

Case 13.—L. R., white, male, married, Greek waiter, aged forty, was first seen August 29, 1930, complaining of pain over entire bladder and right kidney area, with the urine very dirty and cloudy. The patient gave a history of having had a diagnosis of tuberculosis of the right kidney in the out-patient department of Johns Hopkins Hospital in February and March, 1929, when removal of his right kidney was recommended. Examination on September 19, 1930, showed a markedly decreased function of right kidney, but no acid fast bacilli could be found in the urine from either side, but were found in the bladder urine. An examination was repeated on October 23, 1930, with identical findings; and an operation of the right kidney was again recommended. The right kidney pelvis was irrigated with 1 per cent pyridium on each examination and patient was certain that the urinary frequency and pain were subsiding, but no gain could be seen. Pyridium after meals and instillations were used consistently for eight weeks but no permanent change could be seen, the most appreciable gain being noted by the patient in a decrease of the severity of pain and urgency.

Case 14.—Mrs. A. C., female, white, married, housewife, aged thirty-five, developed pain over bladder with frequency and burning on urination on October 20, 1930, six weeks after delivery. Urinalyses showed many pus cells, a moderate number of clumps, and a stained smear showed the offending organism to be the colon bacillus. Her husband, a physician, consulting me, said that he had put his wife to bed, and began an old therapy of three days of alkali by mouth, followed by three days of acid sodium phosphate with urotropin. I suggested two tablets of pyridium after meals, which was followed by marked improvement in all symptoms. The patient did not have to stay in bed, and there was an almost complete clearing up of urine. The last urinalysis, made December 5, 1930, showed no pus and but a small amount of epithelium. Cystoscopy was recommended and refused. The use of pyridium is being continued.

Case 15.—R. J. R., male, white, married, age forty, investigator, U. S. Customs Bureau, had a chronic prostato-vesicular infection following gonorrhea; under observation off and on since September 24, 1927. Had had a great deal of massage, followed by instillations and irrigations of various agents, such as silver salts; used caprokol for a long time. Seen recently and put on pyridium. At first objected strenuously to stain; later, objection over-come by the marked benefit obtained by one tablet after meals over period of two weeks with occasional massage. Seen last November 11, 1930, and reports no trouble in G. U. tract. Urine is clear and he feels better than at anytime in past three years. He is continuing use of pyridium.

Our observations show that in male gonorrhea there is a decided improvement in the subjective symptoms within a short time of the administration of pyridium; in chancroids, there is definite improvement noted in twenty-four hours; and as a general urinary antiseptic the drug has been decidedly effective as an adjuvant to instrumental measures in urinary infections. This short clinical report is offered in the belief that we have in pyridium a most valuable addition to genito-urinary therapy.

BIBLIOGRAPHY

1. Belfield & Rolnick: *J. A. M. A.*, 89:2106, December 17, 1927.
2. Wolbarst, A. L.: *Med. Journal & Record*, 272-273, September 19, 1928.

XUM

3. Pugh, W. S.: *Med. Journal & Record*, 414-416, April 18, 1928.
4. Walther, H. W. E.: *Southern Med. Journal*, Vol. XXII, No. 2, February, 1929.

1835 *Eye Street.*

NEISSERIAN ABSCESS OF TYSON'S GLANDS.*

By THOMAS V. WILLIAMSON, M. D., Norfolk, Va.
Staff Urologist to St. Vincent's and Protestant Hospitals.

No mention of abscesses in Tyson's glands is made in the late text-books, or in the current medical literature, that the writer has seen. Two frank gonorrheal abscesses in what must have been the glands of Tyson have been treated by him within the past eighteen months, and it may serve to round out our knowledge of gonorrheal infections somewhat, if these cases are reported.

Very scant descriptive treatment is accorded the glands of Tyson in either anatomy or histology. The most that is said of them is that there is a ring of large sebaceous glands around the glans penis called Tyson's glands. They empty externally, are particularly numerous on the anterior surface of the corona, and they secrete a substance of pungent, disagreeable odor, which secretion, when allowed to accumulate beneath the prepuce, caseates into smegma.

On each side of the penis, at the junction of the frenum and the corona, may be seen what is apparently the opening of a gland duct. In the absence of anatomical mention to the contrary, it is assumed that they belong to the Tyson group also. Jordan, in his text-book on histology, quoting Lewis, says of them, "The so-called glands of Tyson are shallow non-glandular epithelial pockets opening near the frenulum preputii."

With a desire to be strictly accurate, Jordan evidently seeks to draw a distinction between these two non-glandular pockets and the rest of the true sebaceous glands which secrete smegma and which, in contra-distinction, he calls preputial glands. Recent works on urology, however, make no such fine distinction, but class all of the preputial glands under the head of Tyson's. In either event it seems that the correct nomenclature is employed here, because it is the epithelial pockets, the "co-called glands of Tyson" of Jordans' classification, that is had in mind.

*Read before the Seaboard Medical Association of Virginia and North Carolina at Elizabeth City, N. C., December 2-4, 1930.

CASE 1. A white man, aged twenty, presented himself for examination with the complaint of a painful lump beneath the glans penis. The trouble started six days before as a small, hard sore spot beneath the mucous membrane, and, steadily becoming more painful, it had increased greatly in size.

No history of previous venereal disease could be elicited. The patient was exposed to possible infection by the usual method ten days previously.

On the right side of the ventral surface of the penis, just at the junction of the corona and the frenum, was situated a fluctuating tumor, about the size of a large pea, which seemed to be an abscess. The classical signs of inflammation were clearly evident. The tumor was entirely closed over by integument, there being no external drainage.

There was no discharge whatever from the urinary meatus, and the urine itself was of crystal, sparkling clearness.

A tentative diagnosis of peri-urethral abscess was made. The tumor was incised. It contained several generous drops of white pus, in which were many Gram-negative intracellular diplococci. The abscess was shallow; it did not encroach upon the urethra, and no connection whatever with it could be established. At no time in the course of the infection did the process involve the urethra. The urine remained clear, and there was never the slightest sign of urethral discharge.

The abscess was evacuated through a stellate incision, and the cavity was painted with 5 per cent mercurochrome solution. In two weeks it had closed up and disappeared.

COMMENT. If the abscess had been of the ordinary periurethral pathology, a heavy induration within the spongy portion of the penis could have been felt, while at the same time a hardened, cord-like fistulous tract could have been palpated leading from the abscess to open into the urethra. None was noticed or detected. One does not usually think of a peri-urethral abscess being present without urethral discharge. There was no discharge in this case and the urethra received no treatment of any kind. Since the glands of Tyson are the only type located in this particular region, it is logical to conclude that the gonococcus entered the patulous duct of one of them, and set up a superficial abscess which

was too deep to be a balano-posthitis, and too shallow to be a peri-urethral involvement.

Case 2. The second case came in a few months later. He was a white man, aged twenty-four, who had suffered an acute gonorrhea four years previously. He had been exposed recently to reinfection, and gave a history very similar to that outlined in Case 1. The painful swelling beneath the penis had persisted for three days with gradually increasing intensity. There had been no burning on urination, and no urethral discharge had been noticed.

Examination revealed an elongated prepuce. A small abscess to the right of the frenum near the corona was exuding white pus. This pus contained numerous intracellular gonococci. While there was no discharge from the urinary meatus, the urine contained a few shreds which seemed to be the catarrhal remnants of the first gonorrheal infection. No gonococci were found at any time in the urethra or adnexa, nor did the urine ever show any evidence of a gonorrheal re-involvement. No connection between this abscess and the urethra could be demonstrated.

This abscess was also incised and the shallow cavity treated with mercurochrome. Under this treatment, it disappeared in a week.

No balanitis, which could be fairly diagnosed as such, co-existed with either of these cases.

Conclusion. Gonorrheal abscess of Tyson's glands may exist independent of, or in the absence of, urethral gonorrhea.

818 *Medical Arts Building.*

Correspondence

A Suggestion.

Richmond, Va.,
May 6, 1931.

To the Editor:

I would like, through the columns of the next issue of the Virginia Medical Monthly, to call the attention of the Council of the Society to the desirability of accumulating a fund for the relief of the members who may need financial assistance. (I am sure that a number of us know of cases who would qualify under such a fund.) Our dues have increased 150 per cent in the last few years and it does seem that a part of this revenue should have been devoted to some practical use.

I sincerely hope that the Council will recommend something along this line at the next meeting of the Society.

Ramon D. Garcin, M. D.

Analyses, Selections, Etc.

It Might Have Come From a Doctor.

The following letter is said to have been received by a banker in a western state. It might have been written by a physician:

Gentlemen:

I wish to inform you that the present shattered condition of my bank account makes it impossible for me to send you my check in response to your request. My present financial condition is due to the effect of the federal laws, state laws, county laws, incorporation laws, by-laws, brother-in-laws, and outlaws, that have been foisted upon an unsuspecting public. Through these various laws I have been held down, held up, sat on, walked on, flattened, squeezed and broke until I do not know what I am, where I am, or why I am.

These laws compel me to pay a merchant tax, capital tax, excess tax, incorporation tax, real estate tax, property tax, auto tax, gas tax, light tax, water tax, cigar tax, school tax, syntax, liquor tax, and carpet tax.

In addition to these taxes I am requested and required to contribute to every society and organization that the inventive mind of man can invent and organize: To the Society of St. John the Baptist, the Woman's Relief, Navy League, the Children's Home, the Policemen's Benefit, the Dorcas Society, the Y. M. C. A., the Gold Diggers' Home, also to every hospital and charitable institution in town; the Red Cross, the Black Cross, the White Cross, the Purple Cross, the Flaming Cross and the Double Cross.

The government has so governed my business that I do not know who owns it. I am suspected, expected, inspected, and disrespected, examined, reexamined, informed, required, commanded and compelled until all I know is that I am supposed to provide an inexhaustible supply of money for every known and unknown deed, desire or hope of the human race, and because I refuse to donate to all and then go out and beg, borrow or steal

money to give away, I am ousted, cussed, discussed, boycotted, talked to, talked about, lied about, held up, held down, and robbed until I am just about ruined.

The only reason that I am clinging to life at all is to see what the hell is coming next.

Very respectfully,

—*(A. M. A. Bulletin, April, 1931).*

Woman's Auxiliary, to the Medical Society of Va.

PRESIDENT—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.
PRESIDENT-ELECT—*Mrs. M. N. King*, 1314 Westover Avenue, Norfolk.
SECRETARY—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.
TREASURER—*Mrs. Wm. Branch Porter*, 5125 Cary Street Road, Richmond.

Philadelphia Meeting of Woman's Auxiliary to A. M. A.

The Auxiliary will open its meeting on Monday, June 8th, with a subscription buffet luncheon in honor of all national auxiliary presidents, followed immediately by three round tables; (1) Programs for County Auxiliary Meetings; (2) The Technic and Value of a Committee on Public Relations; (3) History and Archives. These informal gatherings are designed to bring together those interested in special phases of Auxiliary work and give them opportunity to discuss the subject thoroughly during the following days. Another new feature will be a question and suggestion box.

The National Board dinner and pre-convention meeting are scheduled for evening.

The regular business sessions will be held on Tuesday and Wednesday mornings. Reports to be printed may be as long as desired (in reason) but on the floor national chairmen will be allowed exactly ten minutes, state presidents, three minutes.

On Thursday morning will be held the post-convention Board meeting, at 10 a. m. a special meeting for state and county treasurers, and at 10:30 a. m. a general round table presided over by the new president, the subject being "What Have I Gotten Out of the Convention?" At this meeting Mrs. McGlothlan will announce her committee chairmen and outline her plans for the coming year, and the subjects in the question box will be discussed. All meetings will begin precisely at the hour announced.

A program of entertainment for visiting ladies was published in the May issue of the MONTHLY under the heading "Entertainment."

Mrs. Southgate Leigh and Mrs. M. N. King, both of Norfolk, and Mrs. J. Allison Hodges, Richmond, will be Virginia's delegates to the Philadelphia meeting.

Norfolk Auxiliary.

The Woman's Auxiliary to the Norfolk County Medical Society has just issued a most interesting *Bulletin*, in which they state their aim, give a full list of officers and committees, and set forth their activities during the past year. Some interesting facts gathered from this *Bulletin* are that this Auxiliary was organized May 16, 1923, at which time semi-annual meetings were held. In 1927 it was decided to hold quarterly meetings. Starting May, 1929, it was decided to hold four regular meetings and four executive meetings each year. The Auxiliary has a membership of 129, and has participated in varied activities during the past year. It has stressed periodic health examinations for its members by letters, followed by birthday greeting cards, "urging the necessity of an annual physical health examination." It has sponsored talks on the Cause and Cure of Cancer before groups of churches and other organizations. The Hospital Committee collected over 1200 selected books and more than 2000 magazines with which to start perpetual libraries in the hospitals and welfare organizations of Norfolk.

The outstanding accomplishment of this organization is the card party, which was sponsored for the purpose of raising funds with which to build a "Bed-Unit" in the Tidewater Victory Memorial Hospital. So enthusiastic was the response and cooperation of the general public to their appeal that the Auxiliary was unable to accommodate their guests with one party and it became necessary to divide into three sessions. The proceeds netted $1,610.70. An interesting coincidence of the party was the part played by the number "thirteen." The party was held on Friday 13th, was arranged by thirteen Committee Chair-

men, thirteen Captains and thirteen Lieutenants, and 1300 women played.

Mrs. W. P. McDowell, the retiring president of this Auxiliary, will be succeeded by Mrs. R. U. Burges.

Richmond Auxiliary.

The Woman's Auxiliary to the Richmond Academy of Medicine, of which Mrs. N. Thomas Ennett is president, is now showing more enthusiasm in its work than ever before and expects to accomplish much good in the future.

Recently, a fund has been created by the Auxiliary for the undernourished children in the public schools. On May 26th, a card party was given at the home of Mrs. J. Shelton Horsley for the benefit of the Children's Ward at Dooley Hospital. As we go to press, we understand that a large number of tables had been reserved.

The newly appointed Chairman of *Hygeia*, Mrs. O. C. Brunk, is cooperating with the National Chairman to increase the circulation of *Hygeia*.

The Truth About Medicine

In addition to the articles enumerated in our letter of March 28th, the following has been accepted:

Ciba Company, Inc.

Ampules Solution of Nupercaine—Ciba, 25 c.c., 1:1000:

NEW AND NON-OFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Non-official Remedies:

Refined and Concentrated Antipneumococcic Serum, Type I—Lederle.—An antipneumococcic serum (New and Non-official Remedies, 1930, p. 351), prepared by immunizing horses with intravenous injections of cultures of Type I and Type II pneumococci. When test bleedings show the serum to have reached a sufficient degree of potency for type I pneumococcus, the horses are bled aseptically, the serum is refined and concentrated by the method of Lloyd B. Felton. The finished product contains type II pneumococcus antibodies, but not in therapeutically important amounts. It is marketed in packages containing 10,000 and 20,000 units of type I pneumococcus. Lederle Laboratories, Inc., Pearl River, N. Y.

Pollen Extracts—Swan-Myers. The following pollen extracts—Swan-Myers (New and Non-official Remedies, 1930, p. 35), have been accepted: Mixed Grass Pollen Extract—Swan-Myers (Timothy, June Grass, Orchard Grass, Red Top and Sweet Vernal Grass in equal proportions); Russian Thistle Pollen Extract—Swan-Myers. Swan-Myers Company, Indianapolis, Ind. (Jour. A. M. A., April 18, 1931, p. 1307).

PROPAGANDA FOR REFORM

Annual Meeting of the Council on Pharmacy and Chemistry.—The Council held its twenty-seventh annual meeting on March 27th and 28th. Among the subjects considered, those of special interest to the medical profession were: It was decided to permit the advertising of products accepted for New and Non-official Remedies in professional journals intended for dentists, pharmacists, nurses and veterinarians, provided such advertising does not invite or encourage use by unqualified persons. The Council decided that the submitted evidence did not warrant recommendations for the use of gynergen in exophthalmic goiter. It was decided that ovary preparations, except those containing and standardized for the follicular hormone, be omitted from New and Non-official Remedies with the close of 1931 unless new and favorable evidence develops. The Council voted to include in New and Non-official Remedies a statement of the dosage of cod liver oil which shall be based on the opinions obtained from leading pediatricians. The Council approved a proposal that a joint committee of the Council and the Committee on Foods arrange for the publication of a series of articles on the present status of our knowledge of vitamins A, B, C and D It was decided to invite manufacturers of cod liver oil preparations included in New and Non-official Remedies to propose a uniform method for the determination of vitamin A and vitamin D potency, which they would like to have the Council provisionally adopt. It was the general opinion of the Council that claims for the "anti-infective" value of vitamin A in colds and other infections, need further confirmation. The Council decided that the present evidence for the value of copper-iron therapy in the treatment of anemias is insufficient. (Jour. A. M. A., April 18, 1931, p. 1306).

Book Announcements

Quacks. By CHARLES W. WARNER. Jackson, Mississippi. 1930. 12mo. of 206 pages. Cloth. Price, $1.00.

This book is dedicated to man's best friend—the family doctor. It is written by a detail man with thirty years' experience and is an expose of various cults and creeds.

Heart Disease. By PAUL DUDLEY WHITE, M. D., Instructor in Medicine, Harvard Medical School; Physician, Massachusetts General Hospital, Boston. New York. The Macmillan Company. Octavo of 931 pages. 119 illustrations. Cloth. Price, $12.00.

Treatment of Injury by the General Practitioner. By CLAY RAY MURRAY, M. D., F. A. C. S. Assistant Professor of Surgery, College of Physicians and Surgeons, Columbia University; Associate Visiting Surgeon, Presbyterian Hospital in the City of New York. In Two Volumes. Harper's Medical Monographs. Harper & Brothers. New York and London. 1931. Volume I—12mo. of 208-xv pages with 196 Drawings by the Author. Volume II—12mo. of 412-vi pages with 196 Drawings by the Author. Leatherette. Price, $5.00 for the two volumes.

XUM

Virginia Medical Monthly

FOUNDED BY LANDON B. EDWARDS, M. D., APRIL, 1874
OWNED BY MEDICAL SOCIETY OF VIRGINIA SINCE NOVEMBER, 1919

PUBLICATION COMMITTEE

ALEXANDER G. BROWN, JR., M. D., Richmond, *Chairman and Editor*
J. H. NEFF, M. D., University R. L. PAYNE, M. D., Norfolk
AGNES V. EDWARDS, Richmond, *Business Manager*

All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Monthly, 104½ West Grace Street, Richmond, Va.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: $2.00 per annum in advance. Single Copies 20c.

VOLUME 58 MAY, 1931 NUMBER 2

Editorial

Post-Graduate Study.

Post-Graduate education is a foremost need of present day medicine. Of course, it has always been equally important as now, but emphasis fortunately has been more recently laid on this need in modern medical practice. This emphasis has been brought out because it has become more and more apparent that intensive training given in a four- or five-year term at the Medical School cannot answer requirements of educational qualifications needed in medical practice during succeeding decades. There are many reasons for this; two contrary forces at work may be given: the great volume of new work in medical research and improvements in medical practice of the past two or three decades crowd and fill modern days with medical advances unknown in college days; the busy practitioner of the second and third decades of practice, unconsciously influenced by the urge of the immediate duty of practice is prone to neglect the needed study of the advances of modern medicine and the needed review of fundamentals. It is the effect of these opposing forces, at least in a measure, that brings about the need, so apparent today, of continued post-graduate medical study on the part of medical practitioners.

In Virginia, a real effort has been begun, under the patronage of the Medical Society of Virginia and its component societies, to carry forward a system that tends to encourage post-graduate study. In fact the movement on the part of the Medical Society of Virginia was begun some years ago but it has, within the past few years, taken on the proportions of a substantial department of the Society. It is needless to point out the large advantages that accrue to members of the profession through the national, state, and county medical societies. One would feel hopelessly impotent in medical practice but for the varied and innumerable advantages that these organizations are constantly throwing around one. It is needless to speak of the negative and positive forces that organized medicine in this and all the other states of the Union throws around the public and the active practitioner alike. These are obvious, but it is important that members of the society appreciate and utilize this newer agency that is for the advancement of medical efficiency. Post-graduate study, of course, cannot be conducted in its complete sense by the medical Society of any state, but it is through such a central organization that it can be encouraged and fostered and operated at least in an important degree.

The medical men of this state are, therefore, again urged to read with interest and care the Department of Post-Graduate Clinical Education in this journal and to give every effort to support the system by attending the sessions of clinical and medical meetings. One may urge as a preparation for attendance upon such meetings or clinics, where the program is published beforehand, to attempt a sort of cursory study of the anatomy and physiology of the subjects to be discussed at the meeting. In every medical library, no matter how limited it may be, one may find much of in-

terest touching upon the physiology and pathology of the problems to be considered at the clinics.

But most important of all is to set aside a time for attendance and thus to encourage in every way possible the President and President-Elect and other members of the central organization of the State Medical Society in their effort to carry on a state-wide program of post-graduate clinical education for all Virginia practitioners.

Functional Albuminuria.

Albuminuria to the practitioner has been ever important.

For decades the urine examination, disclosing the presence of albumin has meant, ordinarily, some sort of kidney pathology. Such significance partook of nephritis of one sort or another. It has been known, however, that there have been cases of urine examination showing albumin, in which it was doubtful that true nephritis existed. Functional orthostatic, postural or transient albuminuria were some of the terms that have been employed in designating this group of patients.

In the light of the frequency of albuminuria as a finding in examination of patients, a consideration of the subject of so-called functional albuminuria is timely and interesting. Palmer* has presented a resumé of the subject and our readers who desire to review this general subject should read this article.

Correctness of diagnosis, a more accurate prognosis, and a more reasonable line of therapy hang upon the proper understanding of the significance of albuminuria.

In order to develop material in this study Palmer* undertook a consideration of 174 cases showing albuminuria in routine examinations. These subjects showed no abnormalities of physical examinations. The blood pressures were normal, none exceeding 140 systolic. This group was classified as functional intermittent, postural or orthostatic albuminurias. One hundred and sixty-four (164) had been examined for the first time ten or more years before and ten had been examined for the first time nine years before. To this group 147 normal subjects examined approximately ten years before were compared. A review of the data and tables indicates that infectious disease was not a factor in the etiology of functional albuminuria.

*J. A. M. A. Vol. 96. No. 19. Page 1559.

However, the large percentage of underweight patients seemed to point to this as a factor, but with certain reservations. That lumbar lordosis is a frequent cause was not borne out by this study. It was interesting to note that functional albuminuria tended to clear up after eight years without symptoms of abnormalities of kidneys appearing. It was interesting furthermore to observe that without such abnormalities the functional albuminuria appeared to be unimportant. It was pointed out that slight traces of albuminuria in young male adults without other signs of renal disease is of comparatively little significance, persistent in only one of thirty-five cases, after eight years. It was further shown that the most constant factors in association with it were underweight and vascular disease in family history; it was noted that poor posture had no meaning in this series; it was thought that the pathogenesis was of local nature, or possibly resulting from stasis producing local acidosis.

Peripheral Vascular Disease.

Studies on occlusive disease of peripheral circulation offer opportunity for important knowledge in a field that has been late in receiving attention. The fine arterial distribution in the extremities, it must be recalled, largely simulates in general the minute arterial blood supply of organs as well and it is not too much, possibly, to think that there may be no little similarity of action, from a general cause, in the coats of arteries in any location in the body. In other words, one may reasonably think that investigations throwing light upon the behavior of circulation in the digits having vasculo-disease may be of interest in organs of the body such as the heart, liver, kidneys and brain, having a similar state of vascular disease. One then may read with interest the note of preliminary work done by Taylor on transillumination of digits in peripheral vascular disease as reported in *Proceedings of the Staff Meetings of the Mayo Clinic*, March 4th, 1931. He observed that in certain cases of occlusive arterial disease of the extremities, the digits were more opaque to transillumination than normal digits. He undertook some observations. He placed the patients in a semi-dark room and the extremity was elevated approximately 60 degrees from the horizontal. Active and passive motion and light massage emptied the

superficial veins of the part. A flashlight was then applied to the plantar and palmar surfaces of the distal phalanges of the digits and observations were made from the opposite side. The same observation was made after the extremity had been allowed to hang down for one to two minutes. Twenty-five normal persons were examined in this manner as a control. Eleven cases of occlusive arterial disease of the extremities showed increased opacity, arbitrarily graded on a basis of 1 to 4; this was found either on dependency only or on both elevation and dependency.

Associated Pathology in Hyperthyroidism.

Pathology, disclosed at the post-mortem table, that links up changes of tissue with a previous clinical course of disease, must ever offer interesting phenomena to the practitioner. So it is with a study by Lewis* of twelve necropsies on patients who suffered from hyperthyroidism. They were patients observed between 1923 and 1930—marking the period of iodin therapy in thyroid disease. In regard to observations upon the general pathology in hyperthyroidism, brought out prior to this time, Lewis notes the work of a number of pathologists. This antedated the study of basal metabolism in connection with the thyroid activity. He particularly called attention to the pathology of the thyroid gland itself as described and worked out by Marine. All of this investigation bears particularly on the thyroid but it was the purpose of Lewis to report observations made upon hyperthyroid cases as related to pathology outside of the gland. Of the twelve cases studied three died without operation. Anatomic changes in the heart and blood vessels were mainly sclerosis of the coronary arteries, and general arteriosclerosis but this was compatible with the age of the patient. There were no significant anatomic changes in the spleen, liver, kidneys pancreas, adrenals or ovaries.

Lewis was of the opinion that hyperthyroidism by itself has no toxic influence or direct pathologic action on the heart, but indirectly accelerates development and progress of pathologic lesions from other sources by causing increased work.

J. A. M. Sc. January, 1931. Page 65.

Narcotic Drugs in Use Today.

Medical practitioners must ever find a keen interest in any discussion that throws light upon the advances, uses, and indications, as well as control, restriction and even prohibition of narcotic drugs. A nation-wide agitation of the mis-uses of narcotic drugs in present day society is entirely proper insofar as such discussion may bring about a reasonable and proper use of these remedies in conditions of human pain and distress. It cannot be gainsaid that a large mis-use of narcotics is widespread in the land. Much harm and distress is being brought about through their lamentable mis-use. At the same time, the significant and worthy application of these remedies, under careful and responsible medical care and control, brings to suffering man-kind much succor and relief from pain. In this service to humanity is to be found one of the high offices of the medical practitioner.

Practitioners may, however, revise and review their knowledge of this broad and urgent question by following with thought and care the course of articles that have appeared and are to appear in the *Journal of the American Medical Association** on this subject.

Readers may note the subject to be discussed and thereby note the scope and importance of these discussions. The indispensable use of narcotics in surgery, in medicine, in obstetrics, in gynecology, in therapy generally, in local anesthesia, in cough remedies, in gastrointestinal diseases and in psychotherapy, are among the subjects. Besides one may note a paper on the abuse of narcotics; on narcotics in proprietary medicines, on legal aspects of the use of narcotics; and on the chemistry of barbital substitutes for narcotics. From this catalogue of subjects one may readily form a revised opinion of the present day needs of narcotics, as well as note the trend that such drugs are taking as a menace in modern life in this country.

(See *J. A. M. A.* March 14, 1931. Page 856. The Indispensable Uses of Narcotics.

Presidents' Message

Virginia's Temples of Health.

The above caption is in no sense a fanciful figure of speech. Instead, it is descriptive and interpretative, and summarizes in brief the fruition of all the aims and activities of all Virginia hospitals, both public and private, that maintain their institutions for the Health of the People. The public, and even some of the profession have been slow to realize the great work of these institutions, numbering nearly one hundred in Virginia, or adequately appreciate their continuing service for science and for the Commonwealth. It is probable that their private work in many instances, and in others, the supposed financial returns accruing, especially, to a small percentage of physicians, have been the probable causes of the non-recognition of their service, but these cannot be true, for no Hospital that gives proper service to its patrons has seldom earned a profit.

The cause lies deeper, and is based on the old-age doctrine of a false education that does not appreciate fully what is given wholly in the true spirit of scientific service.

The public has always had Hospitals and has quietly accepted their services, but has little noted the benefits so generously bestowed, nor long remembered them, for their existence was only to be expected, and their services only to be utilized, sometimes, perhaps in a reciprocal mood, and at others, in a purely selfish manner. Fortunately, a better spirit has prevailed, and always should, between referring physicians and attending Hospital Staffs, for their aims are identical and beget mutual confidence and respect, and thus only, can science and professional interests be conserved and advanced.

The truth is that Hospitals, both public and private, as developed and maintained at present, are not usually money-making institutions but are the crowning achievements of scientific applied medicine. In their laboratories, the most notable discoveries of medicine and surgery have been made, and in their wards, the theories as to the treatment of disease and the methods for disease-prevention have been applied, and their value proved by human test on a large scale—and thus patients have been the gainers, while our Commonwealth has been benefited by the saving of human life and the making in many instances of producers out of consumers. The total of suffering relieved, of life prolonged and salvaged, and of disease thus prevented, is almost incalculable, and each day adds to this long roll of distinguished scientific service for humanity.

It was in a Hospital that Harvey, the Father of Modern Medicine, demonstrated by his ingenious and daring experiments that the blood circulates, incomparably "the most important discovery ever made in physiological science," and one hundred years later in a Hospital, Hunter did for Surgery what Harvey had done for Medicine, and became the Father of Modern Surgery, and this same inquiring spirit of scientific research still persists in our present-day Hospitals, and not only animates the attending Staffs, but stimulates the general practitioner and specialist without their walls, to aid by their experience and skill in the wise solution of the numerous and many-sided problems of modern medicine that constantly arise.

The spirit of scientific endeavor and research is unselfish, and if the public could be aware of its existence and continuing interest, it would be far more appreciative, and must less critical. Less, also, would be heard from the public of "the high cost of sickness," and still less of the inefficiency of medical method of practice. Proper knowledge would show that the investigation into the high and increasing cost of sickness was undertaken by the physicians themselves for the benefit of their patients, and that even at present, the total sum expended annually in the United States for sickness of every kind is less than the amount paid during the same period for cigarettes, about which nothing is said, and furthermore, that the average income of doctors in this country is only about four thousand dollars, or a little less annually. In addition, it might be noted that frequently patients, themselves, add to Hospital costs by demanding unusual, and often unnecessary, luxuries in their treatment.

It is true that the complete diagnosis of any case of sickness, either within or out of a Hospital is expensive these days, but this is true

only because of it thoroughness and extent, a thing impossible in the days when the present scientific methods were unavailable, because unknown, and yet, such an end, like everything else worth having, is expensive, and must be paid for. The results of examination even now are not always definite, yet generally, they are much more exact and conclusive than formerly, and are consequently much more valuable to the patients in speeding recoveries, and equally so for their subsequent guidance by the physician.

It is not claimed that Hospitals or Hospital Staffs are immune to constructive criticism any more than the general practitioners of Medicine, their allies, but the spirit that dominates them all is the same—an unselfish scientific spirit that energizes the hand, the heart and the head, and makes fruitful medical service to human-kind.

These thoughts about Virginia's Temples of Health are written at no one's request or suggestion, but by one who has known something personally of the benefits rendered, as well as the spirit that almost universally animates these workers in their chosen field of service.

This is a noble work—it is as valuable as it is inspiring—for whatever is discovered, is put into practice for the benefit of all the people the world over.

"Physical fitness for the whole nation" was the goal of ancient Greece, and it was that ideal that was established and honored in those marvellous old Temples of Health, some of which stand today for our admiration and emulation.

The Hospitals of today, the cradles of medical science and teaching, have inherited this old tradition, and have performed many medical and surgical miracles in prolonging life, due to the unselfish labors of scientific research that knows neither barriers nor boundaries, as well as to the devoted service of physicians in the field, the wards, the laboratories and the surgical amphitheatres of our Hospitals.

In private practice, general practitioners gain much knowledge of value in the study of individual cases, and add much to the sum-total of medical learning, and it is regrettable that more numerous reports are not made of their experiences, but their special province is the application in practice of special knowledge for the benefit of their patients. It is, however, in the routine practice in the Hospitals, where all the necessary factors are assembled, that the physician gains the most comprehensive knowledge and varied experience, for a continuous succession of many different types of cases and patients provides a wealth of clinical material for study and practice that cannot otherwise be easily obtained.

Efficient teaching and research Hospitals, especially those whose staffs are composed of physicians whose methods are faithful and tireless in truth-seeking by experiment and investigation, are an asset of untold value to a State and, according to the measure of their efficiency, will be the efficiency of our doctors and nurses who will pass on today and in the future the lessons learned, and thus in time disease may be routed, and "health become the normal lot of man."

Every orderly hospital where the team-work is well regulated without the sacrifice of personal relations between the patient and his physician is more or less a center for teaching, and the larger the hospital, the greater the opportunity. A few of our hospitals are now doing research work of scientific value, and while this is a rather new departure for us, even our State University not having had professorships for specific research work for more than five years, yet this trend is most commendable.

It is needless to emphasize that in the association of these workers, in order to get best results, the strictest courtesy and cooperation between general practitioners and hospital staffs must be maintained and reciprocated, as well as a most scrupulous regard for the highest ethical tendencies in connection with routine hospital service and scientific research inquiry, whether personal or professional.

Neither the alchemy nor the system of scientific healing can be standardized, and because of this, a fertile and inviting field will always be open for seekers after the truths of science, and this will lead to further developments, and a spirit of group service among workers who share ideals in common.

It is only in comparatively recent years that the immense economic value of health and its necessity for the welfare and happiness of the race has been recognized, and this may add to and hasten the fulfillment of this prophetic statement, for "nothing is impossible to science that properly falls within its sphere," nor to

the infinite resources of modern medicine pursuing the progressive methods of scientific healing.

Already, science has marvellously increased our knowledge of disease-prevention, as well as our power to fight and conquer disease, and it is confidently believed that the unselfish labors of the research service of our physicians and Hospitals, as well as the scientific studies and experiments carried on by the large and well endowed bureaus of many research Foundations, will progressively teach all the people till their imagination shall rise to grasp the purpose and common object for which these Temples of Health have been and are being established and maintained, namely, the relief of suffering humanity, and the prevention and cure of disease.

J. Allison Hodges, M. D.,
President, Medical Society of Virginia.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Post-Graduate Medical Education.

Post-Graduate Medical Education conducted under the auspices of the two state medical schools in cooperation with the Clinical Department of the Medical Society of Virginia has, we believe, become an established institution. As might have been expected, the physicians in some communities have responded more promptly and with more enthusiasm than those in other sections of the state. However, there has been a real awakening on the part of physicians and laymen to the importance of continued education and the necessity of keeping abreast of the times—learning the new things in medicine, and discarding old ways and methods that have been found inadequate and unscientific.

The medical schools have naturally been the leaders in this form of education. The clinics conducted for some years at the University of Virginia and at Richmond by the two state medical schools have attracted many physicians and serve as the most striking examples of post-graduate medical education in our state.

We wish to direct special attention to "Post-Graduate Medical Education in Virginia" appearing in the April number of the *University of Virginia Record Extension Series*. This is a very interesting and instructive discussion on post-graduate medical education in this country and includes what has been done and is being done in this state, and also gives an account of the growth and extension of post-graduate clinical education in other states covering a period from 1916 in North Carolina interrupted by the World War and resumed in 1922. It also contains a discussion and comparison of the various plans of instruction followed in thirteen states of the Union. The essential features of five of the programs are arranged for comparison on a chart; these include the New York plan, Michigan plan, Wisconsin plan, North Carolina plan, and the Brooklyn plan. The details of these plans will not be given here, but it is hoped that many of those interested in this subject will secure copies and read the whole report. Quoting from "Summary and Conclusions"—

"The profession and the public are coming to realize that medical science is unbreakably linked with medical education—The profession of medicine is rooted in medical education and will not rise higher than the soil in which it grows."

The term post-graduate education is taking on the element of time as well as intensiveness. Continuous study, not for the purpose of specialization but for the purpose of keeping pace with the progress of medicine, is the new conception of post-graduate education for the benefit of the practicing physician. The organized profession of medicine has recognized and accepted the responsibility to its members and the public. It has been well written by Dr. Chas. A. Gordon, a conspicious leader of the movement in Brooklyn and in the State of New York: "Medical education is not a purely medical problem. Every one has a right to participate in the dividends of modern medicine; consequently the public looks to us. The steadily increasing group consciousness of organized medicine, and its growing desire to as-

XUM

sume leadership in the solution of the great problems of public health, fix on us a very definite responsibility. In the continuous education of the practicing physician we see the greatest single contribution that organized medicine can make, and responsibility rests not on the medical college but on us."

I. C. HARRISON, M. D., *Chairman,*
President-Elect, Medical Society of Virginia.

Schedule Meetings

THE ST. PHILIP HOSPITAL POST-GRADUATE CLINIC,
MEDICAL COLLEGE OF VIRGINIA,
RICHMOND, VIRGINIA.

DATE.—June 15-27, 1931.

PURPOSE AND SCOPE.—To give intensive instruction for a two weeks' period to Negro physicians, primarily of Virginia, in the fields of medicine, pediatrics, obstetrics, and surgery, as related to general practice. There will be lectures, demonstration of cases, and assignment of cases for study on the wards of the St. Philip Hospital. There will also be laboratory assignments daily. Saturday morning will be left open to cover the special problems of the physicians registered for the course. At this time certain of their own more difficult cases will be brought in for study and discussion. One public lecture during each week of the course will be given at night.

The faculty will be composed of the regular staff of the Medical College of Virginia, except the two special lecturers who will come from Howard University.

The Medical College of Virginia is to be commended and congratulated for affording this apportunity to the Negro physicians of the state.

THE NORFOLK COUNTY MEDICAL SOCIETY Programs for June Meetings are given below. Any member of the State Society is invited:

Monday, 8th June—SECTION ON SURGERY:
Case Reports by a number of members.

Monday, 15th June—SECTION ON MEDICINE:
Eczematoid Ringworm of Hands and Feet, Dr. Jas. W. Anderson.
Present Status of Pellagra, Dr. F. C. Rinker.
Serum Treatment of Poliomyelitis, Dr. Claiborne Willcox.

Monday, 22nd June—SECTION ON OBSTETRICS:
Management of the Occipito-Posterior Position, Dr. Chas. W. Doughtie.
Uterine Tumors Complicating Pregnancy and Labor, Dr. Thos. M. Vorbrinck.
Anatomy of the Uterine Pelvic Support, Dr. John W. Winston.

This will close the activities of the Society until 1st October.

Dr. Douglas VanderHoof, of Richmond, delivered a very much appreciated address on the Microcytic Anemias on the evening of Monday, 18th May, before the Norfolk County Medical Society. There was a large attendance of the members and much interest was manifested in the discussion of this growingly important theme.

The SOUTHSIDE VIRGINIA MEDICAL ASSOCIATION, of which Dr. Ruth Mason, Petersburg, is president, and Dr. R. L. Raiford, Franklin, secretary, will hold its regular quarterly meeting in South Hill, Va., Tuesday, June 9th. Members of the State Society are invited to this meeting.

News Notes

Hotel Accomodations for Our State Medical Meeting.

All members of the Medical Society of Virginia who plan to attend the convention to be held in Roanoke, October 6th-8th inclusive, are urged to get their hotel reservations at least a month in advance.

Roanoke's hotel facilities will be more limited this year than in the past due to the destruction of the Ponce de Leon and the rebuilding of one wing of Hotel Roanoke.

The official headquarters for the sixty-second annual meeting will be the Hotel Patrick Henry. It is believed that between the Patrick Henry and the Hotel Roanoke all who are wise enough to make early reservations will be taken care of.

To alleviate the crowded conditions and also to cut the hotel expense it has been suggested by the management of the Patrick Henry for as many doctors as possible to double up, two in a room which would be equipped with twin beds, in this way participating in the double occupancy rate.

RATES AT HOTEL PATRICK HENRY (400 rooms)

Rooms equipped with one bed, to be occupied by two persons—$5.00, $6.00, $7.00 and $8 00 per day.

Rooms equipped with twin beds, to be occupied by two persons—$5.00, $6.00, $7.00 and $8.00 per day.

Rooms equipped with one bed, to be occupied by one person—$2.50, $3.00, $4.00, $5.00 and $6.00 per day.

RATES AT HOTEL ROANOKE

Single room with bath—$2.50 to $5.00
Double room with bath—$4.00 to $8 00
Single room without bath—$1.50 to $2.00
Double room without bath—$3.50

A list of rooms in private homes, convenient to the Patrick Henry Hotel, may be had by writing to Dr. H. H. Trout, General Chairman of the Committee on Arrangements, and this list will also be on file at the INFORMATION BUREAU at the time of the Meeting.

The Mid-Tidewater Medical Society

Held its regular quarterly meeting at Saluda, Va., April 28th, with Dr. William R. Gwathmey, of Ruark, presiding. At the morning session routine business was finished and a few cases reported. Dr. J. Allison Hodges, president of the Medical Society of Virginia and Dr. R. D. Bates, councilor from the First District, presented some matters of general interest concerning medical matters in the state. Following dinner at Bristow Hotel, at which the Middlesex doctors were hosts, the Society went into its afternoon session. Papers were presented by Dr. A. I. Dodson and Dr. Guy Horsley, both of Richmond, presented papers which were interesting and instructive, many practical points being emphasized.

Dr. Hodges concluded the program with some remarks on the status of the medical societies, their work and other features which the Society has recently undertaken. Some of the plans for the State meeting at Roanoke were given. These should prove of interest and benefit to physicians in the rural sections of Virginia as a portion of the program will be given over to the general practitioners and their problems.

The next meeting of this Society will be held in July at Gloucester, Va.

The Virginia Society of Otolaryngology and Ophthalmology

Held its twelfth annual meeting in Richmond, Va., on May 2nd, with a very interesting program. Following the scientific papers, the following officers were elected for the ensuing year: President, Dr. Clarence Porter Jones, Newport News; vice-president, Dr. Courtney Edmond, Clifton Forge; secretary-treasurer, Dr. H. Grant Preston (re-elected), Harrisonburg. Drs. H. B. Stone, Roanoke, Frank Hanger, Staunton, and Fletcher Woodward, University, compose the executive committee. Dr. Beverley R. Kennon, Norfolk, was elected to membership. It was decided to hold the next meeting in Norfolk, in the Spring of 1932.

Virginia Public Health Association.

Dr. P. M. Chichester, of Clarendon, Va., was elected president of the Virginia Public Health Association at its annual meeting on May 14th. He succeeds Dr. B. B. Bagby, director of the State Bureau of Child Health. Dr. J. J. McCormick, public health officer of Norfolk, was elected vice-president, and Dr. A. L. McLean, director of the Henrico health unit, was elected secretary-treasurer.

There were several interesting talks on public health subjects given at the afternoon session. The main subject for discussion was "The Failing School Child as an Economic Problem."

University of Virginia, Department of Medicine, News.

Dr. Tiffany J. Williams, for the past two years obstetrician and gynecologist at the Great Falls Clinic, Great Falls, Mont., has been appointed Professor of Obstetrics to succeed Dr. Francis Bayard Carter who goes to Duke University as Professor of Obstetrics. Dr. Williams received his M. D. degree from Johns Hopkins University in 1923. He served for one year in the Johns Hopkins Hospital; one year in the Sloan Maternity Hospital, New York; one year in the Yale Medical School and Hospital, and three years in the department of Obstetrics and Gynecology at the University of Iowa Medical School.

Dr. H. J. Conn, Chairman of the Commission on the Standardization of Biological Stains, and Director of the New York State Agricultural Experiment Station at Geneva, N. Y., visited the Medical School on April 14th.

Dr. Fred C. Zapffe, Secretary-Treasurer of the Association of American Medical Colleges, spent April 16th and 17th at the University.

Dr. H. L. Higgins, Professor of Pediatrics at the Massachusetts General Hospital, Boston, Mass., visited the Medical School on April 20th.

Dr. James R. Cash, since 1924 Professor of Pathology at the Peiping Union Medical College in China, has been appointed to the Walter Reed professorship of Pathology, succeeding the late Dr. Harry T. Marshall, as the second incumbent of this chair. Dr. Cash received his A. M. degree from the University of Virginia ('15) and his M. D. degree from Johns Hopkins ('19). For five years following graduation he was connected with the Department of Pathology of Johns Hopkins University.

XUM

Dr. William A. White, Superintendent of St. Elizabeth's Hospital at Washington, delivered the address at the annual initiation ceremonies of the Honor Medical Society, Alpha Omega Alpha, on April 24th. He spoke on "Psychological Medicine a Necessity." Dr. William Root, of Slatersville, N. Y., founder of the Society, was present for the occasion.

Dr. J. C. Simpson, Professor of Histology and Embryology at McGill University, Montreal, Canada, and Assistant Dean of the Medical School, visited the University on April 25th.

The fifth Graduate Clinic, conducted by members of the Medical Staff, was held on April 30th and May 1st.

Dr. Lawrence T. Royster, Professor of Pediatrics, gave the principal address at the Duke University Medical School on the occasion of the installation of a Chapter of Alpha Omega Alpha on April 29th.

Four members of the Medical Staff attended the meetings of the Clinch Valley Medical Society at Lebanon, Va., on April 25th. Dr. William H. Goodwin spoke on "Surgical Lesions of the Mammary Gland," Dr. Francis Bayard Carter on "Management of Occiput Posterior Presentation," Dr. Henry B. Mulholland on "Diabetes Mellitus," and Dr. William W. Waddell on "Childhood Tuberculosis."

At the meeting of the University of Virginia Medical Society on April 20th, Dr. Royster spoke on "Congenital Syphilis," Dr. W. W. Waddell gave a "Review of the Pediatric Service for 1930," and Dr. Antonio Gentile presented the results of his research on "Cholecystogastrostomy."

Dr. J. Edwin Wood attended the recent meetings at Atlantic City of the American Society of Clinical Investigation and the Association of American Physicians. On May 5th he spoke before the Association on "Heart Block."

Dr. H. E. Jordan attended the meetings of the National Academy of Sciences and the National Research Council (Medical Division) held in Washington from April 27th to 30th.

Dr. Paul D. White of the Massachusetts General Hospital, Boston, Mass., and Dr. C. Sydney Burwell, Professor of Medicine at the Vanderbilt University Medical School, visited our Medical School on May 7th.

The Commencement Exercises of the Graduating Class of the University of Virginia Hospital School for Nurses were held on May 7th. The class numbered thirty. Dr. Kenneth F. Maxcy delivered the address.

Dr. Henry B. Mulholland and Dr. J. Edwin Wood attended the meetings of the American Clinical and Climatological Association at Hot Springs, Va., on May 8th.

Dr. Rufus I. Cole of the Rockefeller Institute of Medical Research in New York City visited the Medical School on May 12th.

Medical College of Virginia News.

April just past was the busiest April in the history of the outpatient clinics of the Medical College of Virginia: during the month there was 3,799 patient visits for treatment at the clinics.

A total of 380 obstetrical cases have passed through the pre-natal clinic maintained as a unit of the outpatient department of the Medical College of Virginia since last July 1st. These cases have all been delivered either in the homes of the patients or in the hospitals of the college with no maternal deaths resulting.

Dr. J. L. McElroy, superintendent of the Medical College of Virginia hospitals, the Memorial, the Dooley, and the St. Philip, will be one of a small group representing the American Hospital Association at the second International Hospital Congress at Vienna, Austria, which will be in session from June 6 to 14, 1931. Dr. McElroy sailed on the LaFayette with his family on May 21st.

Colonel William L. Keller, Medical Corps, U. S. Army, Chief of the Surgical service at Walter Reed General Hospital, Washington, D. C., will be the recipient of the honorary degree of Doctor of Science at the Commencement exercises of the College, closing the ninety-third session of the institution on Tuesday, June 2nd, just as this journal is going in

the mail. Dr. Keller is an alumnus of the College.

Sight-Saving Classes.

The National Society for the Prevention of Blindness announces that four universities will offer courses for the training of teachers and supervisors of sight-saving classes this summer, as follows:

Tulane University, New Orleans, La., June 15th to July 24th:

University of Chicago, June 22nd to July 24th:

State Teachers College, Buffalo, N. Y., June 29th to August 7th;

Teachers College, Columbia University, N. Y., July 6th to August 14th.

Explaining the necessity for more teachers and supervisors of sight-saving classes, Mrs. Winifred Hathaway, associate director said: "Between 50,000 and 60,000 school children in the United States have such seriously defective vision as to require special educational methods and special eye care. The recent White House Conference on Child Health and Protection recommended the establishment of sight-saving classes as the best method of educating these pupils.

"At present, there are fewer than 400 sight-saving classes in the United States. Inasmuch as the National Society for the Prevention of Blindness estimates that at least 5,000 classes will be needed to provide facilities for educating all visually handicapped children, it may readily be seen how widespread is the need for qualified teachers and supervisors.

"In sight-saving classes, through the use of special large type books, movable desks, ideal lighting, and special teaching methods, children with little vision are not only given the same sort of education that children with full vision receive, but they are also taught how to conserve their remaining sight. Educators have found that many children who had been accounted stupid or sullen displayed excellent intelligence and pleasing dispositions as soon as their defective vision was recognized and they were placed in sight-saving classes."

Dr. Frank Coulson Pinkerton,

Of the class of '28, University of Virginia, Department of Medicine, and recently located at University, Va., has located at Pinehurst, N. C., where he is engaged in the general practice of medicine.

Dr. Joseph H. Smith,

An alumnus of the University of Virginia, formerly of Edwight, W. Va., recently completed a course at the New York Lying-In Hospital, and has located in Farmville, Va., for the practice of obstetrics and pediatrics.

Dental Clinic for Stockholm.

George Eastman, of Kodak fame, has recently contributed $1,000,000 to establish a dental clinic in Stockholm, Sweden. This clinic, says the *Journal of the American Medical Association*, will include a school for dental hygienists similar to that in the Rochester, N. Y., dental dispensary. Other dental clinics have been instituted through Mr. Eastman in London, Paris, and Rome.

Dr. L. H. Bracey,

South Hill, Va., has been elected one of the directors of the Rotary Club of that place.

Married.

Dr. Howard Lyle Mitchell and Miss Dora Wisborne Witt, both of Lexington, Va., March 14th.

Dr. G. A. L. Kolmer, Salem, Va., and Miss Emma Cameron Cook, Roanoke, Va., April 8th.

The American Gynecological Association,

At its meeting in May at Hot Springs, Va., under the presidency of Dr. William P. Graves, of Boston, Mass., elected Dr. George Gellhorn, St. Louis, Mo., president, and Dr. Otto Schwarz, also of St. Louis, secretary. The Council will later decide upon date and place of the 1932 meeting.

Dr. William T. Burch,

Alexandria, Va., has recently returned from Vienna where he took a six months' course in Otolaryngology at the University of Vienna.

The American Proctologic Society

Has arranged an interesting program for its meeting in Philadelphia, June 7th, 8th, and 9th, under the presidency of Dr. Dudley Smith, of San Francisco. Dr. Curtice Rosser, Dallas, Texas, is secretary. There is a registration fee of $5.00 for those who attend the sessions. By invitation, Mr. J. P. Lockhart Mummery, of London, England, an honorary fellow of the Society, will deliver a series of addresses, and Dr. Fred W. Rankin, Rochester, Minn., an honorary associate of the Society, will give an address.

One of our Virginia doctors, Dr. E. H. Terrell, Richmond, is on the program for a

paper on "Selecting the Treatment for Hemorrhoids."

1930 the Best Health Year.

Measles, scarlet fever, whooping cough, and diphtheria are being rapidly conquered, according to a report in the recent *Statistical Bulletin of the Metropolitan Life Insurance Co.* The combined death rate among the company's policyholders for these four diseases was 26 per cent lower in 1930 than in 1929. The reduction in the diphtheria rate alone was considerably greater.

Dr. J. Hugh Bailey,

Formerly of Danville, Va., after sometime spent in Montana, has returned to Virginia, and has located at Scottsburg, Va., where he will practice general medicine.

Dr. Edward C. Joyner,

Of the class of '28, Medical College of Virginia and editor of *Skull and Bones* while at college, was recently appointed city physician of Suffolk, Va., in which place he has been practicing since leaving the North Carolina Baptist Hospital at Winston-Salem, N. C., a year ago.

Civil Service Positions.

The U. S. Civil Service Commission, Washington, D. C., announces open competitive examinations for the following positions, applications to be rated as received until June 30, 1931: Medical officer, associate medical officer and assistant medical officer in general medicine and surgery; chief nurse and head nurse in the Indian Service and graduate nurse and graduate nurse, visiting duty, in the various Services; social worker (psychiatric) and junior social worker.

Full information may be obtained from the above named Commission or from the Secretary of the U. S. Civil Service Board of Examiners at the postoffice or customhouse in any city.

Dr. John Cecil White,

Of the class of '27, Medical College of Virginia, who has been associated for several years with the Doctors Blanton, in Richmond, Va., has just located in Blackstone, Va., where he will be engaged in general practice.

Eye Defects in Kindergarten Children.

Eye defects were found in about one-fifth of approximately 1,000 Brooklyn and Manhattan kindergarten and day-nursery children who were examined by eye specialists. This proportion is almost as large as that of children with eye defects in older age groups, says the National Society for the Prevention of Blindness, which conducted the study. The findings, however, yielded some indications that the vision of children between the ages of three and six years tends to improve during the process of growth, training and development. The girls of this pre-school group had slightly poorer vision than the boys.

The Medical Society of the State of North Carolina

Had a most excellent meeting in Durham, N. C., the latter part of April, coincident with the formal opening of Duke University in that place. The program included several prominent guest speakers in addition to papers by members. The president, Dr. J. G. Murphy, of Wilmington, presided. Winston-Salem was selected for the 1932 place of meeting. Dr. M. L. Stevens, Asheville, succeeded to the presidency, and Dr. John B. Wright, Raleigh, was made president-elect. Dr. L. B. McBrayer, Southern Pines, was re-elected secretary-treasurer.

New York Alumni Association of Medical College of Virginia.

At the meeting of the Association, on May 25th, Dr. Russell L. Cecil, formerly of Richmond, Va., gave an interesting talk on "Being Bacteriologically Minded." Introductory remarks were made by another former Virginian, Hon. Hugh Gordon Miller, now Special Assistant to Attorney-General of the United States. Supper followed the meeting. Dr. M. Benmosche, of the class of 1904, Medical College of Virginia, presided. Dr. Patrick M. Carroll, of the class of 1916, is secretary-treasurer of the organization.

An interesting feature of the May *Bulletin* of the Association was an original poem by Dr. Benmosche, entitled "Our Teachers."

Appointed State Health Officer of North Carolina.

Dr. William P. Jacocks, formerly of North Carolina but recently serving under the Rockefeller Foundation in medical work in India, is reported to have accepted an appointment as State Health Officer of North Carolina.

American Medical Association.

It is hoped many Virginia doctors can arrange to attend the meeting of the A. M. A., in Philadelphia, June 8th-12th. It is an inspiration to be one of the large number to attend these annual sessions and the local committee has made extensive preparations for the com-

fort and pleasure of those attending. All sections will be held under one roof. Special parking and other privileges will be extended motorists who secure credentials from the Physicians' Motor Club at the time of registration at the annual session.

Virginia will be represented in the House of Delegates by her regularly appointed delegates—Drs. Southgate Leigh, J. W. Preston and E. C. S. Taliaferro, all of whom have signified their intentions to attend. It may be years before the A. M. A. meets so near Virginia again, so plan to attend this meeting if possible.

Doctors as Nursing School Teachers.

According to a report made from records of 1,379 nursing schools by the Committee on the Grading of Nursing Schools, more than 16,500 physicians lecture to student nurses or act as instructors in the schools of nursing. Numerically, they form one of the largest groups to come in contact with student nurses as teachers.

The largest groups of schools have from six to fifteen physicians on the teaching staffs: eighty-two schools have eight; eighty-one have ten; eighty-four have thirteen; eighty-one have fifteen. The range is from one to fifty physicians per school.

About 3 per cent, or 522 of the physicians who teach are paid for their services. Three or five dollars for a lecture is the most common rate. In a Maryland school, for example, two of the twenty-one physicians listed as instructors received pay, $50 and $40, for the term. In some cases the fee is considerable, one Boston physician receiving $2,000 a year for his lectures.

Dr. Carl C. Cooley,

Of the class of '29, University of Virginia, Department of Medicine, after being stationed for a time in Norfolk, Va., has been transferred to the U. S. Marine Hospital, Ellis Island, N. Y.

Dr. Edwards Given Promotion.

Dr. Charles M. Edwards, Richmond, Va., has been promoted from the grade of major to that of lieutenant-colonel, Medical Reserves, U. S. Army, effective May 7th.

Great Britain's Low Death Rates.

The British Registrar-General reports that provisional figures for 1930 indicate an infant mortality rate of 60 per 1,000 live births, the lowest ever recorded for England and Wales. This is 5 points below the previous minimum, recorded for 1928, and 14 points below the rate for 1929. The general death rate also was the lowest on record. The birth rate remained the same as for 1929—16.3 per 1,000 population—the lowest recorded.

No-Child Marriages in Cities as Compared With the Country.

According to data from the federal census made public by the Milbank Memorial Fund, birth control or decreased fecundity, or both, is responsible for nearly twice as many childless families in cities as compared with country districts. This striking difference in the number of no-child marriages was revealed in a study of the original enumeration schedules for 69,620 married women of native-white parentage, taken from the 1910 census. Among women forty to forty-nine years of age, 16 per cent of those living in cities were childless, as compared with 9 per cent of those living in the country. The urban samples were selected from the thirty-three northern cities of 100,000 to 500,000 population, and the rural samples, from seventy-four counties neighboring the cities.

Childless marriages were found to be two and one-half times as common among professional people in the cities as among farm laborers. In the city groups, 18 per cent of the wives of professional men were childless, as were 16 per cent of the wives of business men, 15 per cent of the wives of skilled workers, and 14 per cent of the wives of unskilled workers. Among the rural groups, 10 per cent of the wives of farm owners and 7 per cent of the wives of farm renters and of farm laborers, were without offspring.

Whether this greater frequency of no-child families among urban married couples, and especially among the "upper" classes, represents choice or sterility or both, is not apparent from the data analyzed. However, it is suggested by collateral evidence that, because of the greater expense of having children in cities and in view of the higher standards of living of the professional classes, birth control is practiced to a greater extent among the so-called "upper" classes.

Dr. John W. Robertson,

Onancock, Va., after an illness since the latter part of February, with influenza and complications, expected to resume his professional work early in June.

XUM

Dr. Manfred Call, III,

Has returned to his work at Wesley Memorial Hospital, Chicago, after a visit of several weeks to his parents, Dr. and Mrs. Manfred Call, Richmond. Dr. Call graduated from the University of Virginia, Department of Medicine, last year, at which time he received an eighteen months' appointment to the Wesley Hospital. Upon completion of his service, next March, he will return to Richmond and be associated in practice with his father.

Dr. E. E. Walker,

Pamplin, Va., has been spending sometime with relatives at South Hill, Va., recuperating from a recent illness.

Dr. Karl S. Blackwell,

Richmond, Va., has been named president of the metropolitan board of the Young Men's Christian Association of Richmond, Va.

Dr. George D. Pettit.

Of the class of '29, Medical College of Virginia, after completing his internship at the Johnston Memorial Hospital, Abingdon, Va., has located for general practice at Chilhowie, Va.

Meeting Called Off.

On account of the death of Drs. R. C. Lynch, of New Orleans, and J. A. Stucky, Lexington, Ky., prominent specialists, who were killed in an automobile accident on their way to the meeting, the session of eye, ear, nose, and throat specialists which was to have met in Bowling Green, Ky., on May 13th, was called off. Dr. Lynch was to have been the honor guest at this meeting.

Virginia State Dental Association.

The following new officers were elected at the recent meeting of the Virginia State Dental Association, held at Old Point Comfort, in May: President, Dr. W. H. Street, Richmond; secretary-treasurer, Dr. A. M. Wash, Richmond, re-elected; executive council, Drs. T. W. Wood, Richmond, W. E. Miller, Norfolk, R. H. Phipps, Marion, and S. D. Kent, Danville. The association recommended Dr. E. F. Hodges Petersburg, and Dr. R. F. Simmons, Norfolk, to the governor for appointment to the state board of examiners.

The association will meet next year with the West Virginia Association at Winchester, Va.

Why Children Have Nervous Breakdowns.

Parents and parental attitudes are the main causes of the nervous breakdowns of adolescents, says Dr. George K. Pratt of the National Committee for Mental Hygiene in the *Parents' Magazine* for March. Everyone nowadays is picking on the parent. Dr. Pratt, however, acknowledges that the recognition of the symptoms of the "teen-age" breakdowns and taking the necessary steps to prevent them are no easy matters. Perhaps it may surprise those who are shocked at the so-called revolt of youth, that the writer considers this a rare symptom of breakdown, but that he is inclined to place at the head of the list over conscientiousness and extremely model behavior.

A Reviewer's Opinion on "Medicine in Virginia in the Seventeenth Century."

The Journal of the American Medical Association for May 2nd, in a review on "History of Medicine in Virginia in the Seventeenth Century," prepared by the Committee on History of Medicine in Virginia, Dr. Wyndham B. Blanton, chairman, states: "The volume reveals much intensive research into early medical practice . . . and will be found one of the most readable, well written accounts of the early history of medicine in the United States available."

If you have not secured a copy of this book, write the VIRGINIA MEDICAL MONTHLY about it as it would prove an interesting and valuable addition to your library.

Officers of Winchester Hospital.

Dr. Hunter H. McGuire was re-elected president of the Winchester Memorial Hospital, Winchester, Va., for the thirtieth consecutive term, at the meeting on May 16th. Dr. McGuire has held this position since the institution was opened in 1901. Dr. J. E. Harris was re-elected secretary.

Crippled Children in Michigan.

Available records of crippled children in Michigan indicate a much greater proportion of them in the population than the general estimate of 3 per 1,000. In Tuscola County, where an actual count was made, the proportion (including posture cases) was found to be 9 per 1,000. Infantile paralysis was responsible for one-third to two-thirds of the seriously handicapped children who came to the clinics in this county. Bone tuberculosis, rickets, motor accidents, congenital deformities, and industrial accidents were other important causes.

Third Pan-American Medical Congress.

Attention is again called to the Pan-Ameri-

can Medical Congress to be held in the City of Mexico from July 26th to 31st inclusive, under the auspices of the Department of Public Health of the Government of the United States of Mexico. Further information may be obtained from Dr. Francisco de P. Miranda, Secretary of the Congress, Departamento de Salubridad, Mexico, D. F.

Important Notice.

The Post-Graduate Course of Ear, Nose and Throat Surgery at the University of Bordeaux, France, will commence July 27, 1931.

The course is given in the English language. The class is limited to twelve physicians and is offered by Prof. George Portmann.

For information apply to Dr. Leon Felderman, 413 Mitten Building, Philadelphia, Pa.

Heads State Lions Club.

The Lions Club of Virginia, at its annual meeting in Danville, the middle of May, elected Dr. E. G. Gill, of Roanoke, district governor.

Dr. R. Angus Nichols, Jr.,

Has returned to Richmond, Va., after spending four and a quarter years at the New York Post-Graduate Hospital. His offices are located in the West End Medical Building. He will limit his practice to surgery.

Dr. O. Noel Morison,

Of the class of '28, University of Virginia Department of Medicine, at the completion of a year's fellowship at the Chicago Institute for Juvenile Research, was promoted April 1, 1931, to the position of psychiatrist upon its psychiatric staff. During his fellowship he received training in criminology at the Joliet, Ill., State Penitentiary and other State correctional institutions, in psychoneuroses and early psychoses at Michael Reese Hospital, and in child guidance work at the Institute for Juvenile Research and its allied clinics throughout the State. Prior to entering upon work at the Institute, Dr. Morison had approximately two years' training at the reception service of the Binghamton (N. Y.) State Hospital. On July 1, 1931, he will begin two years of neurological training at the Neurological Institute of New York.

Memorial to Dr. Murat Willis.

A special feature of the annual meeting of the Ex-Interns' Association of Johnston-Willis Hospital, Richmond, Va., on May 2nd, was the unveiling of a tablet to the memory of Dr. Achille Murat Willis, co-founder with Dr. George Ben Johnston of the Johnston-Willis Hospital. Former interns and a number of guests witnessed the ceremony.

Dr. W. F. Mitchell,

New Castle, Va., recently had the misfortune to break his right arm.

Dr. Kenneth Bradford

Has resumed his practice in Staunton, Va., after an extended rest in Florida.

Dr. A. M. Showalter,

Christiansburg, Va., underwent an operation for appendicitis early in May.

American Medical Golfing Association Tournament.

The Seventeenth Annual Tournament of the American Medical Golfing Association will be held in Philadelphia, Monday, June 8th, at the Aronimink Golf Club instead of the Huntingdon Valley Country Club, as announced in the Brochure of the Association which was recently mailed to members. The Aronimink Golf Club is modern; the course is in splendid condition and is interesting and sporty. The Local Committee is doing everything possible to make the tournament a great success. The Philadelphia men composing the Local Committee on Arrangements are Dr. John W. Croskey, Chairman; Dr. Willis F. Manges, Dr. Fred H. Leavitt, Dr. Frank J. Kelly, and Dr. Damon B. Pfeiffer.

Membership in the American Medical Golfing Association is open to any male Fellow of the American Medical Association in good standing. It is hoped that many of the medical golfers throughout this State will join the Association this year and take part in the Philadelphia tournament. There will be many attractive and valuable prizes awarded at the Annual Dinner, to be held on the evening of the day of the tournament at the Club House. For any additional information, communicate with any member of the Local Committee, or with the Executive Office, 1124 Macabees Bldg., Detroit, Mich.

A Correction.

Attention is called to a correction to be made in the article on "Milk Protein Therapy in Eye Disease" by Dr. H. W. Carter, of Washington, N. C., which appeared in the March issue of the MONTHLY. On page 802, first column, third paragraph from bottom, the statement is made that "Vistosan is produced in the chemical laboratory, 'Alemania,'

in Berlin-Wilmersdorf." The distributors in this country ask us to say that "Vistosan is produced by Troponwerke (Dinklage & Co.) Koln Muhlheim, Germany."

Dr. Benjamin L. Hume,

Recently of Huntington, W. Va., has located at Nokesville, Va., where he will be engaged in general practice. Dr. Hume is an alumnus of the Medical College of Virginia.

Slight Improvement Reported in Dr. Williams' Condition.

As we go to press, we are glad to report that a slight improvement has been noted in the condition of Dr. Ennion G. Williams, State Health Commissioner, who has been critically ill at his home in Richmond.

Dr. and Mrs. Charles W. Putney,

Staunton, Va., sailed on May 30th, for Europe, where Dr. Putney will take a post-graduate course at the University of Vienna. Before returning, they will visit Berlin, Prague, Munich, Zurich, Berne, Paris, and London.

Wanted—

Laboratory technician wishes position in Doctor's office in Richmond. Can use typewriter efficiently. Address No. 296, care this journal. (*Adv.*)

For Sale—

Slightly used Instrument Cabinet. Height 66 inches, width 20x16 inches, with four glass shelves. Below, a large roomy compartment. Also, a physician's latest model Microscope complete. Address No. 292, care this journal. (*Adv.*)

Wants Position—

Experienced technician desires position in hospital. References. Address Miss Hilda Zimmerman, Salem, Va. (*Adv.*)

Obituary Record

Dr. Joseph Nicholson Barney, Jr.,

Of Fredericksburg, Va., died in the Walter Reed Hospital, Washington, on April 30th, after having been in ill health for several years. He was born in Powhatan County, Va., in 1867. Dr. Barney graduated from the Medical College of Virginia in 1893. After graduating, he practiced for a short while at Woodstock, later returning to his home in Fredericksburg where he took a position as head of the department of science of the old Fredericksburg College. Dr. Barney had been for the past twenty years city health officer of Fredericksburg; he was a member and past master of the Fredericksburg Masonic Lodge, a member of the Elks, of which he was exalted ruler last year; and was also connected with many other civic and fraternal organizations. He was in active service during the World War. Dr. Barney had been a member of the Medical Society of Virginia for thirty-five years and was for a number of years a member of the State Board of Medical Examiners from the First District. His wife and two children survive him.

Dr. William E. Warren,

Williamston, N. C., beloved as doctor and citizen, died of pneumonia, April 5th, aged 61 years. He was a prominent member of his State, the Tri-State and Seaboard Medical Societies. He was for some time health officer of Martin County, N. C.

Dr. Robert Maitland Ellyson

Died at his home in Washington, D. C., May 10th, after an illness of about two weeks. He was seventy years of age and graduated from the George Washington University Medical School in 1888. Dr. Ellyson was a native of Petersburg, Va.

Dr. George Martin Kober,

Emeritus dean and emeritus professor of hygiene at Georgetown University School of Medicine, Washington, D. C., died at his home in that city on April 24th. He was born in Germany but came to this country in 1866, when only sixteen years of age. He graduated in medicine from Georgetown University in 1873. He had held many positions of importance and continued his interest in medical matters to the end, though he retired from active work several years ago.

Dr. William Hamilton Dulaney,

Perhaps the oldest physician in Virginia, died at his home in Lynchburg, Va., March 9th, death being due to cerebral hemorrhage. He was 94 years of age and graduated in medicine from the University of Maryland School of Medicine, Baltimore, in 1859, and was in the Confederate service in the War Between the States. He was at one time a member of the City Council of Lynchburg.

Dr. J. Emmett Sebrell,

Charlotte, N. C., died April 4th, at the age of 69 years. Death was due to coronary occlusion. Dr. Sebrell graduated from the Medical College of Virginia, Richmond, in 1882.